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THE PHILOSOPHICAL REVIEW.

ON A SUPPOSED INSTANCE OF DUALISM IN PLATO.

I.

THIS paper proposes to examine a much disputed place in the *Republic,* where the 'two-world' theory appears to raise its head, if current interpretation is right. The inconsistencies and incoherences involved in the similes of the Sun, the Line, and the Cave are well-known, and I do not intend to touch upon them here, except incidentally. Plato, like other philosophers, is liable to self-contradiction; but when interpreters disagree so radically among themselves, it is legitimate to ask whether they may not have started from a common erroneous presupposition. I believe that this may be found in the attempt to apply the Cave to the Line, an attempt which is closely bound up with the assumption that Plato desired to show the dependence of Becoming upon Being. To those who hold some form of this view the breaks between the upper and the lower line and between the cave and the region outside, appear to reveal a metaphysical dualism, or at least to conceal it imperfectly. But should the Cave be applied to the Line, and do the breaks signify one and the same thing? The allegory of the Cave has a purpose distinct from the Line, and neither is primarily concerned with the relation of the world of Becoming to that of Being.

It is an attractive but misleading plea in favour of a certain looseness or laxity of interpretation to say that analogies must not be pressed, or that Plato's figures and myths should not be taken as doctrine. These similes are not myths; they illustrate doctrine, and are in fact preliminary to the theoretical discussion

of the Platonic propædeutic and dialectic. Again, analogies should not be pressed; but they must first be understood. As Socrates says, analogy is a slippery thing, and it is already pressed and deformed out of recognition when its declared purpose is obscured by supposed parallels from other parts of Plato.[1] Only after exact study of the text can we be certain what is and what is not parallel. When Adam, in applying the Cave to the Line, divides the quadripartite line into five portions, sandwiches sensibles in between intelligibles, and makes the sun an object of the intellectual education,[2] or when the ethos of the allegory of the Cave is so distorted that the struggle is transformed into an orderly educational progress and the rugged steep ascent smoothed into a 'gradual ascent,' may we not suspect that some clue has been lost for lack of which the whole figure is plunged into confusion? In interpreting analogy we must be sure of two things —to ascertain the purpose and limitations of the symbolism, and on no account to confuse type with antitype. Not until these things have been done—and I do not think they have been done —can we legitimately take the large view that analogy must not be pressed. When the general structure has been firmly outlined, common sense may be trusted to guard against the temptation to press details unduly.

Let us then see whether Plato has not told a plain tale, and whether the analogy is not clear and simple. I hope to justify the account offered below by a full discussion of the text in another place, and this may perhaps excuse a certain dogmatism, which is due rather to the need for brevity than to disrespect for views which I formerly shared.

II.

> The sun rode high. 'During our ignorance'—
> Began Ferishtah—'folk esteemed as God
> Yon orb: for argument, suppose him so,—
> *Be it the symbol, not the symbolized.*'

If we glance for a moment at the allegory of the Cave, it appears to contain two systems, each governed by its own light,

[1] See especially Mr. Stocks's paper on "The Divided Line," *Classical Quarterly*, 1911.

[2] See references in Adam, *Rep.*, Vol. II., p. 163.

which are in marked contrast to one another. A fire rules the cave, and casts shadows from a row of moving puppets, borne by concealed showmen, upon the far wall. The shadows pass before prisoners seated at the bottom of the cave, who are so trammelled by chains that they can see nothing but the shadow-play. The problem of the allegory is to rescue some of them and draw them by force to the sunshine outside the cave. Here there is a parallel system of sunlight (with natural shadows, originals and sun), of which the fire-system seems to be an imitation. However that may be, no one will dispute that the whole machinery is symbolical. It is an analogy to some experience, or set of experiences. Plato directs that the whole figure should be attached (I use the word deliberately) to what was said before (517 *b*). Let us turn to what was said before in order to see how the imagery develops.

At the beginning of Book VI Socrates asks whether men no better than the blind, deprived of knowledge of each reality, ought to rule, or those who know each reality and are not behind in experience. The problem is really twofold. The intellectual difficulty is to devise some coherent scheme for bringing the young philosopher into contact with reality. But the main difficulty is social and political. Men seek other ends than knowledge; they seek honour and pleasure, and their rewards and punishments actually warp the minds of young men who are naturally fitted for the life of the philosopher and ruler. Social pressure deforms the minds of the young, who despise knowledge; and the few who value it withdraw from public life. Can a road to the Good, which is declared to be the source of all knowledge and reality, be found, not only for those who are willing to undergo the discipline, but for men who have already been drawn aside to illusory ends? That is the problem for which the similes should suggest an answer.

The image chosen for the Good is the sun, which we have already encountered at the climax of the allegory of the Cave. Plato draws it from the immemorial tradition of religion and poetry, for which the sun is the bestower of good gifts. When he writes that the sun is the offspring of the Good and very like it (506 *e*), he means no more than that there is an analogy be-

tween them (508 *b*) in respect of a *common quality* which fits the sun to symbolize the Good. A whole mythology has been spun round this famous passage, upon the arbitrary assumption that the Good (which is a form) is a kind of Demiurge, and that the sun, itself somehow more than phenomenal, is his creation. It is unnecessary to resort to such high speculation. We speak of the sons of Mars and of Venus without genealogical implications, and it is certain that Falstaff had none when he cried: 'If they speak more or less than truth, they are villains and the sons of darkness.' Plato's own language in the similes amply shows that the common quality between the Good and the sun is goodness. He celebrates it as the steward of light (508 *b*), the giver of increase and nourishment (509 *b*), the lord of the seasons (516 *b*). A visible agent of beneficence, final in its sphere, is made the type of the intelligible source of all good.

This view is confirmed by Plato's own account of the visible realm under the sun. He expressly discriminates sight from the other senses because sight and colour serve the purposes of the analogy and the other senses do not (507 *c*). The point is not, as those believe who take this passage to be a serious contribution to Plato's doctrine of the senses, that sight depends upon a medium, but that the medium is *variable*, and proceeds from a definite source. If his illustration is to symbolize the dependence of both knowledge and opinion, the search for pleasure and for righteousness, upon a common principle, it must show how a sense-organ—if that is his example—can, though adapted for its function, perform that function well only when the variable condition is emitted directly from its source. Obviously the sun and sunshine, the eye and colour alone fulfil all these conditions. They form a sun-system, discriminated from within the sensible world, and their only significance is to illustrate the analogous system of intelligibles under the Good. As Plato has taken such pains to define his visible symbolism, we must not lightly deform it, or build allegorizing philosophies upon it.

As the chief concern of this paper is the seeming dualism in the similes, we need devote but a few lines to the figure of the sun. Obviously there is no metaphysical relation between the Good and such an aspect of the sun as alone serves the purpose

of the analogy. The simile simply illustrates by means of the sun ('descried ultimate giver of all good') the transcendence of the Good (509 *a*, *c*), and the dependence of all values upon it. But one difficulty involved in the usual view may be touched upon. The sun, though not γένεσις, is said to cause γένεσις, and increase and nourishment: even so the Good, though not οὐσία, causes οὐσία. The association of two such philosophical terms as γένεσις and οὐσία has led to much hair-splitting. But there is no metaphysical puzzle. For obviously γένεσις must be growth, since it is caused by the 'making sun,' and is coupled with 'increase and nourishment.' Milton's three words 'sovran vital lamp' cover the whole symbolism.

III.

The Line.

The Line too is an analogy and no more than an analogy. Glaucon asks Socrates to complete the figure of the sun, and Socrates recalls the original formulation of the analogy (509 *d*, cf. 508 *b*)—that the sun and the Good are two, and the kinds they rule over are two, the visible and the intelligible. If this does not mean that the visible in the lower line too is simply illustrative, the language is strangely misleading.

The purpose of the Line is stated by Glaucon—at least no other account of its purpose will be found in the text. At the end of the simile he says (511 *c*): 'I understand. . . . Not quite satisfactorily, for I think you are describing an arduous task; but I see that you wish to distinguish that part of the real and intelligible which is considered by the science of dialectic, as truer than that which is the object of what are called the arts. These have their hypotheses as first principles, and though their students are obliged to study them with the understanding, not with the senses, still, inasmuch as they do not make their inquiries with reference to a first principle, but by starting from hypotheses, you think that they do not exercise intelligence on these subjects although they are intelligible and have a first principle.'[1] If this careful summing-up is taken at its face value, the Line

[1] I use Mr. A. D. Lindsay's translation throughout.

should illustrate the distinction between the two stages of the higher education. Why does Plato at this point formulate the two methods of the propædeutic and the dialectic? They are the steps by which the soul, unwarped by lower interests, naturally moves to its goal, the Good. The relation between the Good and the intelligible realm was roughly indicated in the first simile. It is transcendent; they are dependent. But the analogy now formulates precisely the methods to be employed successively in the systematic pursuit of the Good.

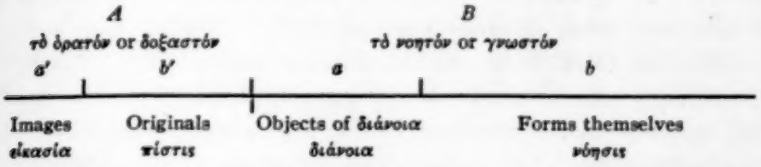
If I have stated the purpose of the analogy rightly, and if (as the text undoubtedly says) the figure of the sun and the visible is continued here, the lower line, *both states and objects,* should be purely illustrative. That is why the Line is a proportion.

Glaucon is told to take a line unequally divided, and to divide it again in the same proportion. One main part is the visible, the other the intelligible. In the first part of the visible are placed natural shadows and reflections; in the second their originals—animals, plants and things made by man. The latter are *clearer* than their images, and it is suggested that the images stand to their originals as the object of opinion (τὸ δοξαστόν) does to the object of knowledge (τὸ γνωστόν).

It is not hard to see that the bond between the images and their originals must be the sunlight, which Plato called truth in the previous simile. This consideration would seem to exclude the addition of any other objects whatever to the lower line; for such additions, however plausible they may seem to be, destroy the relation of light. Indeed, would anyone have thought of adding to the lower line more than Plato actually specifies unless it had been identified with the cave and all that the cave contains? As I hope to show that the lower line and the cave have no connexion at all with one another, it may suffice to interpret the former by holding strictly to Plato's account of it.

When Plato says that images stand to originals as the opinable to the knowable, a distinction established in Book V is simply recalled *in the same terminology,* because he wishes to 'place' the new illustration (cf. 478 *a*, *b*, 479 *b*). The ruling ratio ($A:B$), already known, is used to establish the subordinate ratio

($a' : b'$) in respect of clearness or truth, so that the latter in turn may illustrate the ratio ($a : b$) within the intelligible.



The lower line (and the upper) is a ratio, not a classification. To assume that the carefully specified objects between which the ratio subsists should have superimposed upon them all members whatever of the general class to which they belong, is to commit a glaring fallacy. This procedure ruins the ratio of light, which is the core of the analogy, and is not borne out by the text.[1]

Now what is the relation of an image to its original? It is a clue pointing to the original, and guaranteed by the light. To take a hint from the *Timæus* (52 *c*): it is not its own essence of itself, but is of or relative to something else, its original.[2] Again, one naturally says, both in Greek and in English, that one sees *oneself* in a reflection (*Alcibiades* I, 132 *d*). Plato's application of the figure of natural images (as distinguished from the artificial) illuminates his purpose here. A man uses the reflection of a thing to tell about the original when some difficulty or limitation prevents direct vision (*Phædo*, 99 *d*, *Rep.*, 532 *b*)—one thinks of a surgeon's speculum. But there is no certainty till the original is seen directly; then there is autopsy. It is in this sense that the originals are clearer than their images. For a thing is clear (σαφές) when it is beyond doubt, as when it is seen and touched. Then one no longer looks through a glass darkly, but face to face.[3] Indeed the scholastic figure based on St. Paul's

[1] It is well to remember that *three* sentences suffice to describe the lower line, and that the additions depend on inference from supposed parallels in other parts of Plato. Why are additions felt to be necessary? Because the content of the lower line, as Plato describes it, is not a 'world,' and cannot stand by itself. But if it is intended merely to symbolize the upper line, then it has all the meaning necessary for its purpose.

[2] See Cook Wilson, *Interpretation of the Timæus*, p. 109.

[3] Clement of Alexandria saw the connexion of the two illustrations in *Stromateis*, I, XIX, 94, 1: καὶ κατ' ἔμφασιν δὲ καὶ διάφασιν οἱ ἀκριβῶς παρ' Ἕλλησι φιλοσοφήσαντες διορῶσι τὸν θεόν. τοιαῦται γὰρ αἱ κατ' ἀδυναμίαν (cf. *Rep.*, 532 *b*) φαντασίαι ἀληθεῖς, ὡς φαντασία καθορᾶται ἐν τοῖς ὕδασιν καὶ ὁρῶμεν [τὰ] διὰ τῶν διαφανῶν καὶ διαυγῶν σωμάτων. This is a comment on the Pauline text.

text almost expresses the sense of the Platonic distinction between εἰκασία and πίστις. The one is *specular* or ænigmatical, the other is *clear* or immediate vision.

For we must revise the assumption that εἰκασία and πίστις, which are correlated with the images and originals, are real levels of apprehension. They are not curiously and artificially connected each with its own special kind of real object: they form an illustrative ratio parallel to a similar ratio of stages in the intelligible (511 *d*), and are in fact psychological attitudes perfectly easy to understand when they are taken in connexion with their objects. The selection of the word πίστις is, I think, decisive. The criterion used to distinguish images from originals is clearness. What is clear is also πιστόν, assured; and πίστις is assurance. Εἰκασία has suffered distortion because it has been assimilated to the state of the prisoners in the cave, and is hence called guesswork, imagining, conjecture and the like—one might preserve some trace of the original play of words and say mere speculation. We may retain the word, and say that Plato had in mind just 'specular vision,' remembering the old phrase 'mirrors of speculacion' and Caxton's he goat 'speculynge and beholdynge his shadowe' in the water. The attitude of *speculation* is conjectural in the sense that it is indirect, a presage which needs confirmation. The meaning of the word is stamped by the phrase εἰκάζειν ἔκ τινος, which signifies inference from evidence. Thucydides calls Themistocles the best speculator or diviner (ἄριστος εἰκαστής) of the future, and the context shows that he meant no lucky guesser. What establishes the sense beyond cavil, however, is the description of the prisoner gazing at the natural shadows[1] *outside* the cave. He is unable to look directly at the originals because he is dazzled by the light; so he is constrained to gaze first at the shadows and reflections. This symbolizes the limitation and the function of διάνοια. Plato means that διάνοια, by virtue of some limitation, is εἰκασία or speculation because it cannot 'make sure,' and that νόησις is direct and gives assurance or πίστις. Now this is exactly what the final statement of the proportion in 534 *a* seems to say. I cannot enter on an analysis of

[1] These are identical with the natural shadows in the line.

that passage here. But it is enough to note that the proportion is recalled immediately after Socrates has finally declared the propædeutic sciences to be no sciences in comparison with dialectic, and that the purpose (I think the sole purpose) of the proportion is to say that true science bears the same relation to assurance (πίστις) as διάνοια does to speculation (εἰκασία). If we take all these lines of evidence together, is it not a reasonable inference that εἰκασία and πίστις are intended to illustrate a ratio of clearness between the states in the upper line? They are simply illustrative psychological attitudes.

But, it may be objected, is it not unimaginative to tie Plato down so tightly? Even if the lower line is *primarily* meant to symbolize the upper, can the implications of the figure stop there? Why not allow that Plato, in recalling that the visible is less clear than the intelligible, wished to set forth the general dependence of Becoming upon Being? One can but invite such a critic to carry his logic through. In the interests of his interpretation he must deny that Plato intended to distinguish the *visible* from the *sensible* for the purposes of the analogy; he must allow that the lowest section of the line is meaningless for him as it stands; he must, against the indications of the text, fill in the content of the lower line according to some principle that will transform it into a satisfactory 'world'; having done this and destroyed the analogy of light, he must face the embarrassing fact that the content of the lower line as *Plato* described it is identical with the natural images and originals outside the cave; but he cannot carry his principle through, and expand these images and originals into a 'world'; for they obviously are no more than symbols of the intelligible (like the lower line!), and he is already committed to the view that the *cave* is the realm of opinion or sense. And when all these accommodations are made, can he contend that the result is valuable enough to justify them? He is left with the datum upon which Plato constructed his proportion, the already known fact that the opinable, from which the material of the analogy is drawn, is less clear than the intelligible. But that is simply the ground of the analogy. Mistiness is not the mother of imagination, and a great artist does not construct his figures with such looseness.

As the purpose of this paper is merely to ask whether a metaphysical dualism is betrayed in these similes, we need not enter in detail into the problems arising out of the upper line. It is enough to say that the apparent prominence of objects in the lower line has led commentators to interpret the upper line as a classification of objects or kinds of objects. But if the account of the upper line is read without this prepossession, it is clear that Plato formulates two successive *methods* by means of which the intelligible is systematically investigated, and that one of these, with its objects, is clearer than the other. His distinction, in fact, corresponds to the difference between the propædeutic and the dialectic. The arts, as Plato calls them, are less clear, like image-gazing, because they are self-limited. They assume as 'immovable' their hypotheses, which are not absolute, but the starting-point of fragmentary though coherent systems. It follows as a secondary mark of this limitation that the objects of the 'arts,' being relatively simple, can be represented by visible diagrams.[1] On the other hand dialectic acknowledges no absolute starting-point but the Good, and uses the hypotheses as stepping-stones, nor does it need the help of visible images. Since it is direct, and can 'give an account' of things, this method may be called science in the true sense because it gives *assurance*.

The break between the upper and the lower line is therefore simply the break that must be made between a piece of symbolism and its antitype if the analogy is not to end in hopeless confusion. There is no metaphysical dualism because the objects and the states in the lower line have no more than the ghostly life of a symbol. This result is not invalidated by the fact that the mathematician may take his diagrams from among the objects in the lower line. If Plato had said that his science arises from the contradictions of sense in the lower line, then a difficulty would have to be faced. But he has in mind the mathematician, who, conscious that his objects are intelligible only, uses visible symbols of those objects as aids in the search. In short: the two methods have for their sole aim the organization of the intel-

[1] To take a modern parallel: it is simple to make a picture of a three-dimensional world, but the four-dimensional space-time continuum conceived by the general theory of relativity does not admit of this aid to the imagination.

ligible, but they differ in clearness because the one reasons down from an ἀρχή which is taken as immovable though it is not immovable, while the other reasons up to an ἀρχή which is really immovable because it is absolute.[1]

IV.

The Cave.

The Cave is an allegory of education and the want of it (514 *a*). If we place any confidence in the train of reasoning suggested above, the region in the sun outside the cave must be the place of knowledge and education. As in the Line, gazing at the natural images in the sun signifies the propædeutic stage, and gazing at the originals the dialectic. But here the dialectic is figured in its full process, and a young man, rescued from another kind of sight, is led through all stages of the dialectic till he sees the source of all knowledge and reality. On the other hand the prison-house of the cave should mean want of education (ἀπαιδευσία) whatever that may prove to be. It is a system of half-lights and illusions.

Now the whole imagery of the allegory has been taken as a Jacob's ladder,

> 'Its foot in dirt, its head amid the skies.'

On this view the cave represents grades of opinion, which naturally and necessarily precede organized knowledge. This theory of a graduated ascent is the offspring of the union of the Line and the Cave. The passage which is thought to direct the usual application is as follows (517 *b*): 'Now this simile, my dear Glaucon, must be applied in all its parts to what we said before;

[1] I must here acknowledge my debt to Mr. J. L. Stocks's paper in the *Classical Quarterly* for 1911. We disagree in that he, while seeing the illustrative function of the proportion, still considers the lower line to be real and identical with the cave. It is right to mention that Dr. Henry Jackson takes the objects in the lower line as purely illustrative, but identifies them with the images and originals both inside and outside the cave, where he sees a 'two world theory.' As I did not see Mr. Jackson's paper (*Jour. of Philology*, X) till my first draft was written, it is Mr. Stocks who led me to see the significance of the proportion.

the sphere revealed to sight being likened to the prison dwelling, and the light of the fire therein to the power of the sun. If you will set the upward ascent and the seeing of the things in the upper world with the upward journey of the soul to the intelligible sphere, you will have my surmise; and that is what you are anxious to have.'

If this sentence is interpreted in the traditional manner, Plato is guilty of some curious oversights. The application of the allegory to the upper line—surely the most important part of the figure—is not mentioned specifically. He uses the *sun* and the *visible* in an ambiguous way: for in the Line the sun does not appear, while in the allegory the sun and the visible certainly symbolize the intelligible. And he even takes pains to bring the ambiguity before our eyes. For the phrases 'the sphere revealed to sight' and 'the power of the sun' have the very ring of the symbolism of light—yet they must be awkward periphrases for the sensible if we accept the current view. I have already remarked upon the extraordinary difficulty that commentators experience in applying the abundant imagery of the Cave to the meagre proportions of the quadripartite Line. But Plato does not say that the figure of the Cave must be applied to the Line. He directs that the figure should be attached[1] *to what was said before*—that is, to the *two* previous analogies of the sun and the visible region. The third simile is the natural development of its predecessors, the Sun and the Line. It re-integrates the system of the sunlight in the visible region *outside* the cave, and Plato asks his readers to compare the prison dwelling with this region revealed to sight—the imperfect light of the fire, which is a symbol, with the power of the sun, which has never been anything else than a symbol. That is: he contrasts a new symbolism with the old, assuming that his readers will seize the obvious contrast between the lights.

But his readers have nevertheless identified the puppets and shadows in the cave with the originals and images of the lower line, a procedure which works havoc with the interpretation.

[1] The word is προσάπτειν, which is used in the *Frogs* to describe the fitting of a tag on to verses in Euripides' prologues.

Imagery of the Allegory[1]		*Interpretation*
(*Symbolism re-integrated from the first two similes*)	Sun	Form of the Good
	Originals	Forms themselves
	Natural Images	Objects of διάνοια
(*New symbolism parallel to and contrasted with the old*)	Fire	
	Puppets	
	Shadows	Realm of ἀναιδνσία

The originals and images in the lower line are identical with the originals and images in the sun outside the cave; they symbolize the intelligible because they are seen in the sunlight, which signifies truth; neither the one set nor the other has any additional significance; the objects in the firelight belong to a different system and mean something different. To identify the objects in the lower line with the objects in the cave is to ignore the plain indications of the symbolism of light, and it is equally arbitrary and even more inconsistent to identify the lower line with objects both outside and inside the cave. If some still contend that consistency should not be expected here, I can only remind them of a retort of Henry Sidgwick's to an opponent who suggested that a contradiction he pointed out might be a mark of a higher truth: he replied that he had never been able to distinguish contradictions which were marks of the higher truth from those that were signs of error. These inconsistencies are inherent in the interpretations, which ignore the central point of Plato's figure—that the sun and objects seen by its light symbolize the intelligible, and the fire and objects within its system signify a human θεωρία, whatever that may prove to be: and they ignore it because interpreters first identify the visible with the sensible, and then make the firelight symbolize the sensible. So much for the symbolism. The second sentence in 517 *b* explains its general meaning. The rescue is like the upward journey of the soul to the intelligible—but from what?

[1] I subjoin Adam's application for comparison:

A (Cave)		*B* (Line)
1. Fire	=	Sun
2. Shadows of puppets	=	Shadows cast by sun
3. Puppets in cave	=	Originals in ὁρατόν
4. Ascent from cave into ὁρατόν	=	Ascent from the ὁρατόν into the νοητόν

Column *A* symbolizes column *B*. Observe that ὁρατόν in *B* 3 means the sensible, in *A* 4 it is a symbol of the intelligible and nothing else, and in *B* 4 again it must be the sensible and opinable.

Let us recall Plato's problem. It was whether it is psychologically possible to rescue some from the corrupting pressure of the ordinary pleasures and ambitions. Society made men bad. Now the cave is called a human affair (517 *d*), and seems to be entirely a human device. It is a prison house (like the den of Giant Despair) which men by craft make to appear a house of pleasure (ἀγωγεία). The showmen who manipulate the puppets manage a shadow-play—what our grandfathers called a galanty-show and the Elizabethans a motion. When we consider the bonds of the prisoners, their cramped posture, their inability to see anything but the shadows, it is impossible to argue that their state is naïve lack of education. Nor are the danger to the life of the rescuer (517 *a*) and the struggle to drag the prisoner clear of the cave, reconcilable with the assumption that a natural process of education can be carried on in the cave. It is a 'nocturnal day,' a Hades with no breath of the 'air that carries health from happy regions.' The allegory figures, not a Jacob's ladder rising step by step to the Good, but an ἀγών between two opposing 'lives' or ends.

The background of the figure is the time-honoured question of the Greek sages: What 'life' ought the wise man to follow, the life of honour and pleasure, or the life of theory?[1] They are as far apart as the feeble existence of a ghost and the healthy life of a man upon the earth (516 *d*). The cave and the upper region, in fact, signify two diverse systems of ends, and the symbolism is exactly adapted to bring out this vital distinction. For in the sun the eye is naturally drawn from the shadows to the originals, and so to the source of light: these shadows 'draw' to the Good. But the end of the cave is the shadow-play, and the puppets and fire are human machinery to create illusory shadows. The prisoners are 'turned the wrong way and look where they ought not to look' (518 *d*), nor can they unaided see what produces the shadows. The cave, in short, is a system of ends hostile to the Good, and is planned to keep down as manifestly as the visible region is adapted to draw upwards.

[1] But for Plato theory must not remain mere theory; it must be used in the state. There is an absolute break between the ordinary life of the cave and the life of theory because the followers of the two ends, politics and theory, each despise the ends sought by the others.

This ἀπαιδευσία is that described in Book VI, where Socrates speaks of a noble nature ruined by a false education (491 *e*).[1] It flatters the competitive and pleasure-loving instincts of man. Now the allegory makes it abundantly plain that the cave fosters political ambitions and produces the political man, unrestrained by the knowledge of the Good and given over to the lust for power and the unbridled pleasures described in Books VIII and IX. The rewards of the cave are honour and pleasure, and its inevitable penalty is that men who remain there, warped and corrupted, forget their bonds and desire nothing nobler.

Such perversion can only be arrested by the kindly force of a physician before it becomes irremediable. Hence the rescue is called a 'loosening and healing' (515 *c*). The prisoner, with no knowledge of the source of the shadows, cannot recognize in the puppets the insignificant cause of his galanty-show. (This incredulity is commonly called πίστις, belief!) If it is necessary to define the puppets beyond saying that they are the machinery to produce shadows, they may be called human artefacts (εἴδωλα)[2] which counterfeit the true objects of knowledge outside the cave, magnified by the fire to make a shadow-play and only known for what they are after the prisoner returns to the cave (520 *c*).

The prisoner is so bemused that he must be dragged against his will clear of the cave. The bonds, the struggle, the steepness of the way—all these are signs of the great gulf between the two systems of ends, the feverish guessing at the shadow-play in the gloom contrasted with the spectacle of the sun without. What do these obstacles represent? The men in the cave have been in part cajoled, in part forced to seek inferior goods, in especial the life of ambition with its reward of honour (τιμή). The cave hardens the dispositions of τὸ θυμοειδές and τὸ ἐπιθυμητικόν into a 'way of life.'[3] This life is moulded by the showmen; and rewards and punishments are the instruments which secure the

[1] The best commentary on the allegory, with its opposing ideals, are pages 491–3 of Book VI.

[2] See Shorey, *The Idea of the Good in Plato.*

[3] One naturally thinks of the Pythagorean apologue of the three ways of life (theory, competition, and trade), which is connected, as Mr. Stocks has shown (*Mind*, 1915), with Plato's analysis of the functions of the soul in Book IV.

allegiance of the young to the established system. If the allegory has any artistic consistency, it is impossible to gloss over these obstacles, to interpret the machinery of the cave as aids to reflection, and to see in the puppets and the fire, focussed as they are upon the shadow-play, no more than natural steps on the way to truth. There is a great moral and intellectual conversion, a leap enforced 'from Satan's foot to Peter's knee'; and the cleft between the two systems is a genuine break. The continuity must be sought, not in the objects, but in the mind of the prisoner, who is converted from darkness to light because his nature, if not utterly corrupted, really needs the light.

If this interpretation has anything to commend it, there has been a radical misunderstanding of Plato's purpose. The simile of the sun proved to be a pure analogy. The Line is an analogy, continuing the figure of the visible. The Cave, which was thought to be a variation upon the Line, is concerned with opposing lives, one of which seeks political honour and pleasure, and the other seeks the Good through knowledge and then applies the knowledge in the state. It answers in figure the question of questions —whether it is *possible* to turn men from the low ends of the established state and make philosophers kings. But though the two systems are self-contained, and though there is a real cleft between them, this does not mean a metaphysical dualism because levels of apprehension and grades of objects are not in question.[1] The cave and the visible systems are turned in opposite directions because they are the setting of two systems of ends, and men must be dragged from following the one to the illumination of the other if they are to know the Good and found the ideal state—*tantæ molis erat . . .* !

Plato's end is practical. His philosophers must return to the cave. This explains one significant detail in the summary of the figure, upon which I can only touch here. The man who stops short at the 'arts' cannot know the Good; for he has never gone beyond his hypotheses. He remains in the 'specular' condition.

[1] Is the cave then not the place of δόξα? Yes, but of a blind opinion, deformed and perverted in the interest of the ends of the cave. This opinion is not the natural and healthy state of the young and naïve: it saps the impulse to know.

Not till he has grasped the Form of the Good and argued victoriously through all tests, is he fit to lead others to the Good. That is one reason why the propædeutic of itself is no better than opinon compared with science, and why he is said to remain a dreamer. The intelligible has not imparted to him the nisus which thrusts the mind on to marriage with true Being, and he is unfit to aid in founding or ruling the Kallipolis.

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THE IMPORTANCE OF HERACLITUS.

WE call the early Greek philosophers 'cosmologists,' as their successors called them φυσικοί; and, as usual, the epithet conceals as much as it reveals. The oldest thinkers from whom we have any considerable remains are Xenophanes and Heraclitus. Of the latter's work Περὶ Φύσεως, only one out of the three parts which the ancients recognized was devoted to physical questions proper. The other two parts were devoted to religion and morals. And as for Xenophanes, it is only necessary to read the comparison which he draws between himself and the Olympic victor, to realize what he regarded as the supreme value of his teachings. It is the promise of *good government* and the prosperity which that ensures. For note the point of the comparison: "Even if there arise a mighty boxer among a people, or one great in the *pentathlon* or at wrestling, or one excelling in swiftness of foot—and that stands in honor before all tasks of men at the games—*the city would be none the better governed for that.* It is but little joy a city gets of it if a man conquer at the games by Pisa's banks; it is not this *that makes fat the store-houses of a city.*"[1]

The early philosophers were cosmologists in contrast with the thinkers of the Sophistic period, who had little or no interest in cosmological problems. They were cosmologists in the eyes of the historians, because it was their theories of the cosmos that exhibited the richest historical variety and charm. They are fairly to be regarded as cosmologists *par excellence,* because the whole background of their thought, in relation to which all special problems are viewed, is cosmological. But if we say more than this we exaggerate.

There is another way in which, from excess of caution, we may easily do injustice to these men; and illustrations are not far to seek. It is notorious that the 'love' and 'strife' of Empedocles and the 'intelligence' of Anaxagoras are physical bodies, ex-

[1] Fragment 2, Diehls ed.; Burnet tr.

tended and moving. But if we emphasize this aspect of the matter, we may distort the facts not less seriously than if we neglected it altogether. For the physical characteristics of 'intelligence,' for example, are conceived as they are because of the peculiar functions that are ascribed to 'intelligence'—the teleological ordering of the heavens, on the one hand, and of plant and animal organisms on the other. Picture-minded, indeed, Anaxagoras is; but to set down νοῦς as a finely divided substance with certain definite physical characteristics is utterly insufficient. The like must be said in relation to his brethren.

The first claim of Heraclitus upon the attention of the world —his most distinctive and original contribution, in which, so far as he knew, no other thinker had anticipated him—is his theory of the nature of 'wisdom,' or science. "Of all whose discourses I have heard," he writes, "there is not one who attains to understanding that wisdom is apart from all (πάντων κεχωρισμένον)."[1] His predecessors and contemporaries had endeavored to learn the nature of things. He first turned his attention to the nature of that knowledge, which, in their undiscriminating fashion they had tried to find.

Let it not be urged by way of objection that 'wisdom' is for Heraclitus not wisdom in the abstract but the exceedingly concrete primary substance, the universal fire; or that in a writer of his time a spatial term such as χωρίζεσθαι is not to be taken as a mere metaphor. For to Heraclitus there is no need of metaphor in the case. Wisdom and fire are one; and from his point of view there is not the slightest difficulty connected with their identification. The separateness of wisdom is at the same time a logical and a spatial separateness; and it is both indistinguishably. There is all the more reason for us to be on our guard against being led—by motives of a false historical economy—to ignore the more deeply significant aspect of the matter.

In the first place, science (σοφίη, τὸ σοφόν, νόον ἔχειν, φρονέειν, φρόνησις) must be distinguished from mere information (ἱστορίη), or the knowledge of many things (πολυμαθίη).[2] "The learning

[1] Fr. 18, Bywater's arrangement; Burnet tr.

[2] There is, however, no distinction between theoretical and practical knowledge. Σοφίη is at once knowledge of natural law and practical wisdom—espe-

of many things (πολυμαθίη) teacheth not understanding (νόον ἔχειν), else would it have taught Hesiod and Pythagoras, and again Xenophanes and Hekataios."[1] "Pythagoras, son of Mnesarchos, practiced inquiry (ἱστορίην) beyond all other men, and choosing out these writings, claimed for his own wisdom (σοφίην) what was but a knowledge of many things (πολυμαθείην) and an art of mischief."[2] It is in the sense of this distinction that the term κεχωρισμένον, noted above, must primarily be taken.

On the other hand, the knowledge of particulars is necessary for science. "Men that love wisdom (φιλοσόφους) must be acquainted (ἴστορας) with very many things indeed."[3] And the particulars must be established by direct observation. "The things that can be seen, heard, and learned are what I prize the most."[4] But the observed facts must be understood. "Eyes and ears are bad witnesses to men if they have souls that understand not their language (βαρβάρους ψυχάς)."[5]

The distinguishing characteristic of science is its universality. "Wisdom (τὸ σοφόν) is one thing. It is to know the thought (γνώμην) by which all things are steered through all things."[6] Science is universal, first, in its application. ". . . All things come to pass in accordance with this Word. . . ."[7] Secondly, it is universal in its validity for men. There is diversity of opinion, but there is one science for all. "So we must follow the common, yet the many live as if they had a wisdom (φρόνησιν) of their own."[8] Its validity for all men is, of course, far from implying that all men recognize it. "They are estranged from that with which they have most constant intercourse."[9] A multiplicity in science would amount to a multiplicity of worlds; but the world "is the same for all."[10] It is only for our uncontrolled imagination that this could fail to hold. "The waking have one common world, but the sleeping turn aside each into a world of his own."[11] "It is not meet to act and speak like men asleep."[12]

cially wisdom in the conduct of government. The explicit refusal of Socrates to distinguish between wisdom and temperance is exactly in accord with the spirit of the Ionians.

[1] Fr. 16.
[2] Fr. 17.
[3] Fr. 49.
[4] Fr. 13.
[5] Fr. 4.
[6] Fr. 19.
[7] Fr. 2.
[8] Fr. 92.
[9] Fr. 93.
[10] Fr. 20.
[11] Fr. 95.
[12] Fr. 94.

With regard to method the fragments have nothing to say. We find only warnings of the necessity of faithful endeavor in spite of obstacles. The task is supremely difficult. "Nature loves to hide."[1] "If you do not expect the unexpected, you will not find it; for it is hard to be sought out and difficult."[2] "Those who seek for gold dig up much earth and find a little."[3]

It is more than probable that Heraclitus had nothing to say about scientific method. Plato tells us that Heraclitus's followers (of the Sophistic period) did not distinguish between perception as such and knowledge.[4] It may be assumed *a fortiori* that no very fundamental distinction of this sort existed in Heraclitus: that for him knowledge and opinion were alike perception. When we look over the fragments to see how the difference between those who know and those who do not know is described, we find only this set down: that the former perceive what escapes the latter's attention. "For though all things come to pass in accordance with this Word, men seem as if they had no experience of them. . . ."[5] "The many do not take heed of such things as those they meet with, nor do they mark them when they are taught, though they think they do."[6] Hence the common inability to understand scientific doctrine. "Fools when they do hear are like the deaf: of them does the saying bear witness that they are absent when present."[7] But if knowledge is no more than duly attentive perception, a theory of method is superfluous. The beginnings in this field must be ascribed to Parmenides.

Nevertheless, when this important reservation has been made, it remains true that the distinction between science and natural history, on the one hand, and the distinction between science and opinion, on the other hand, are laid down by Heraclitus substantially as they have remained through almost the whole later course of speculation.

Heraclitus's theory of nature is based upon an induction of the greatest range and moment—a generalization which is now

[1] Fr. 10.
[2] Fr. 7.
[3] Fr. 8.
[4] *Theaetetus*, 179 D.
[5] Fr. 2.
[6] Fr. 5.
[7] Fr. 3.

part and parcel of our educated common sense, but which when first proposed constituted one of those profound transformations by which the world of barbaric tradition has grown to be the world of science. To ordinary observation nothing is more evident than the distinction between motion and rest, between that which changes and that which abides. Change appears to be by no means universal. Most of the things that we contemplate appear to be stable. If the guess might be hazarded that everything must at some time or other be in some degree modified, it is none the less clear to us, as we look abroad upon the world, that most things are motionless most of the time.

To Heraclitus we owe the observation that change is universal and continual.[1] The thing that seems to keep its individuality untouched is in truth like a river. From one moment to another, every part of it is transition. To speak of it as the 'same' is only half true. "You cannot step twice into the same rivers; for fresh waters are ever flowing in upon you."[2] And that which seems most individual, the self of each one of us, is not exempt. "We step and do not step into the same rivers; we are and are not."[3]

Upon what evidence was this conclusion based? Upon the best evidence that was available—evidence which has been considerably enlarged since Heraclitus's time, but which has not been essentially improved upon. As a matter of fact, such propositions can never be formally demonstrated. As well try to demonstrate the uniformity of nature. However far our study of change may go, the experience has its limits; and beyond those limits, either in an encircling ἄπειρον or in an elementary particle, the changeless still may lurk. We accept the universality of change, not because it is proved but because it appeals to us,

[1] The nearest approach that had been made to the universal flux had been in the doctrine of Anaximenes that air is always in motion, "for if it were not it would not change as much as it does." Burnet's comment is thus beside the point: "Meanwhile we remark that the idea was not altogether novel, and that it is hardly the central point in the system of Heraclitus. The Milesians held a similar view. The flux of Heraclitus was *at most* more unceasing and universal" (*Early Greek Philosophy*, 2d ed., p. 162; my italics).

[2] Frs. 41, 42.

[3] Fr. 81.

and it appeals to us because it lies in the direction of our expanding knowledge. So much that to a superficial view has appeared to be at rest has upon examination showed itself to be compact of motions, that nowhere any longer can we find credible evidence of a limit to this state of affairs. So it was with Heraclitus. The example of the river faithfully records his thought. The hills, the sky, the stars seem stable. But so does the river, if one looks at it from a distance. Even so, "the sun is new every day."[1]

If change is universal, why is it not generally discernible? The most natural explanation would seem to lie in the slowness of the processes. Heraclitus does not reject this explanation and he doubtless made use of it. But he emphasizes a very different explanation. It is that each process is compensated and thus concealed by another and opposite process. The corollary of universal change is universal opposition. "Homer was wrong in saying: 'Would that strife might perish from among gods and men!' He did not see that he was praying for the destruction of the universe; for, if his prayer were heard, all things would pass away."[2] "Men do not know how what is at variance agrees with itself. It is an attunement of opposite tensions, like that of the bow and the lyre."[3]

How Heraclitus was led to this interpretation of the facts we do not know. But there are certain circumstances (strangely overlooked by the commentators) which were ready at hand and which may well have influenced him.

Anaximander (as Aristotle informs us) defended his theory of the infinitely extended primal substance on the ground that only if this were unlimited in amount could the processes of nature be endlessly prolonged. Hence arose the theory of the innumerable worlds, scattered through the boundless universe, ever coming into existence and passing away. Now, for reasons which we have already suggested, Heraclitus was opposed to this theory; in fact we have the indirect testimony of Theophrastus that he definitely rejected it. The universe, he held, is finite,[4]

[1] Fr. 32. [2] Fr. 43. [3] Fr. 45.

[4] Against this statement must be considered Fragment 71: "You will not find the boundaries of soul [the primary substance] by traveling in any direc-

and there is but a single world. A plurality of worlds would not lie down easily with the unity of science. As little would the notion of a world that arises and passes away. "This world," he wrote (using the technical term κόσμος which must just then have been coming into fashion), "which is the same for all, no one of gods or men has made; but it was ever, is now, and ever shall be an ever-living Fire, with measures kindling, and measures going out."[1] But if the all is limited and the world is one, how is the argument of Anaximander to be met? How does natural change continue? Heraclitus, we may surmise, finds the answer in his theory of compensation. If natural processes were simple—if there were no opposition—the world indeed could not continue. But if every process is double, containing moments which are opposed and mutually balanced, the continuance of the cosmos is assured. Plato, in his rendering of Heraclitus's theory of human survival after death, uses a similar argument,[2] and there is little doubt that he is here reproducing what was in the older thinker's mind.

tion, so deep is the measure of it." But the language is not decisive; and, indeed, the concluding words (οὕτω βαθὺν λόγον ἔχει) imply for the Greek rather finitude than infinitude. (βαθύς, of course, means simply *large;* there is no necessary implication of *downward* in it, any more than in *altus*). The fragment cannot safely be taken to mean more than that the all is animate; which, from Heraclitus's point of view is equivalent to asserting the universality of natural law. All things considered, we cannot do better than follow the ancient tradition.

[1] Fr. 20.

[2] *Phaedo*, 72 B–D. The relation between Plato and Heraclitus, with respect to the doctrine of survival, is easily misunderstood. The debt of the younger thinker to the older is indeed evident. Heraclitus's reasoning is faithfully reproduced as an essential factor in the argument of the *Phaedo*. Life and death are typical opposites that pass into each other in the everlasting oscillation. "And it is the same thing in us that is quick and dead, awake and asleep, young and old; the former are shifted anl become the latter, and the latter in turn are shifted and become the former" (Fr. 78). Moreover, as in the *Phaedo*, the state after death is of the nature of a reward or punishment: "Greater deaths win greater portions" (Fr. 101). And this fact, as in the *Phaedo*, implies a continuance of the individual. (This has been held to be inconsistent with the theory of the universal flux; but it is no more so than the duration of the present life). On the other hand, in the teaching of Heraclitus, there is no implication of individual *immortality*, and every motive for questioning it; and Plato, in taking over his argument, is far from assuming that it warrants any such conclusion.

Heraclitus's theory of the primal substance follows almost inevitably from his conception of the universality of balanced change. That there was such a substance he did not call in question. It is part of his heritage. The doctrine that in its transformations this substance does not alter in amount is first (so far as we know) stated by him;[1] but it is clearly implied in the theories of his predecessors, especially in Anaximenes's theory of rarefaction and condensation. Heraclitus accepts without question the conception of the primal substance as not only that of which things are made, but that which makes them. It is the source of all motion, that is to say, of all life. It is itself a living being, conscious, rational, supremely just. The portion of the substance present in each one of us in its primitive form is (at least according to Anaximenes, and not improbably according to the earlier Milesians) the soul. Heraclitus uses the term 'soul' freely as a name for the primal substance.

Now water is a mobile substance and is essential to all living things. The 'air' of Anaximenes[2] is if anything more mobile; and it is the breath of life. But if the universal motion is what Heraclitus has declared it to be, the first principle must be such that its very nature, its very existence, is a balanced change. Moreover, perception is at least as characteristic of animal life

[1] Fr. 23.

[2] I enclose the word in single quotation-marks in order to avoid for my text an unnecessary complication. But in this note I wish to touch briefly upon the disputed point. Anaximenes taught that ἀήρ (mist) is everywhere present, though generally in an imperceptible state. When it is rarified or condensed (as fire or cloud, for example), we perceive it, but in its normal state it escapes our observation. In view of these facts, Mr. Burnet declares, air as such must be regarded as unknown to Anaximenes; and its discovery must be assigned to Empedocles, because the latter was the first to recognize it as a distinct substance, different from mist and water. This appears to me to be altogether illogical. Anaximenes, like his predecessors, believed, of course, in a single first principle; and all the forms in which this presents itself are, according to his theory, distinguished only by their different degrees of rarefaction and condensation. But the invisible ἀήρ, according to him, is as distinct from visible mist as it is from fire, or as water is from earth. Shall we say that air was not discovered till modern chemists isolated its constituents? As for Mr. Burnet's assertion that Empedocles's clepsydra-experiment proved that air was distinct from vapor of water, it is absolutely without foundation. (*Cf.* Burnet, *Early Greek Philosophers*, 2d ed., pp. 78 ff., 263 ff.)

as breathing; and in the case of vision it is evidently (to naïve observation) a *shining forth* of light from an internal source. The flame which maintains itself by consuming its fuel and passing away in smoke, and which sends out light in all directions, is clearly what is required. Add to all this the phenomenon of bodily heat, and the identification of fire and soul is inevitable.

With regard to the general course of natural changes Heraclitus has nothing new to say. Anaximenes had arranged the various form of matter, not in pairs of opposites, but in a linear series, according to density, from fire to earth and stones; and he had declared that they passed into one another, to and fro, in this order. Heraclitus takes over this scheme. He simplifies it by taking together 'air' and water as water,[1] and, conventionally enough, putting all solids under the head of earth. The transformations of substance are then in the order, backward and forward, of fire, water, and earth. The Theophrastean tradition is that he accepted Anaximenes's doctrine that the transformations are essentially changes of density, but that he "explained nothing clearly." This may well be true. The fragments speak only of 'transformations' (τροπαί) or, metaphorically, 'exchange' (ἀνταμοιβή): "All things are an exchange for Fire, and Fire for all things, even as wares for gold and gold for wares."[2]

However that may be, the only original feature of Heraclitus's theory of the matter is his application to the cycle of changes, of his theory of universal opposition. Every change is accompanied by its opposite; or rather the two form but a single unity. "The way up and the way down is one and the same."[3] In this application, if we are to judge from the somewhat scanty evidence, the triple division is somewhat of a nuisance. Water occupies a middle position, where it should be equally opposed to fire and to earth. But, as a matter of fact, in the particular explanations that have come down to us, it is only fire and water that count in any active way. The hot, dry fire struggles with the cold, wet water; and the struggle is the existence of both and of all things. Earth counts only as a passive spectator.

It has often been pointed out that if the balance of changes were indeed complete, the theory would have explained apparent

[1] Frs. 25, 21. [2] Fr. 22. [3] Fr. 69.

rest too well—it would have made perceptible changes impossible. The balance must therefore be a moving one: it is an oscillation. The principle appears to be that, since each of the forms of matter depends for its continuance upon the existence of the others, any temporary encroachment, or excess of one form over another, gives rise to a later recession, or defect.[1] It is in this way that the great cyclical changes of nature—in particular the succession of the seasons and the alternation of day and night, are accounted for. Fire and water are the great enemies. The warm, dry day and summer, and the cold, damp night and winter, mark the ascendancy of the one and the other.

How far does the oscillation ever go? In particular, does it ever lead to a swallowing up of all things in fire? The fire, being unfed, would instantly begin to go out; so this condition of affairs would be only momentary. In that moment the opposition of force would have disappeared in a perfect concord, which would in a sense be the destruction of the world, though in a deeper sense the world—that is, the uniformity of nature—would still prevail. Did Heraclitus believe that this might, or indeed would, happen? The natural interpretation of his words would imply this: "Fire in its advance will judge and convict all things."[2] Largely on the ground of a supposed logical inconsistency, some have been unwilling to accept this interpretation, and have insisted that the fire need not "convict" everything at once. That is possible but not plausible; and the underlying motive is clearly mistaken. There is no more contradiction involved in the utmost conceivable swing of the pendulum than in the least of perceptible oscillations. "The sun will not overstep his measures"—this expresses the perfect balance—"if he does the Erinyes, the handmaids of justice, will find him out"[3]—this expresses the oscillation.

It has not been sufficiently appreciated by the commentators that in Heraclitus's theory of balanced change we have to do

[1] The reasoning is thus similar to that by which naturalists explain the balance of a given flora and fauna. Consider, for example, a species of carnivora and their habitual prey. If the prey become scarce, the carnivora die down or are dispersed; whereupon the prey multiply rapidly and thus bring about a new increase of their enemies.

[2] Fr. 26. [3] Fr. 29.

with an architectonic conception of the first, or almost the first, importance—a conception comparable in its possible utility with that of latent heat, or perhaps even with that of potential energy. The historical fact is, I suppose, that the conception has remained practically unutilized, a logical scheme without specific application, until almost our own day; that is to say, until its adoption by Gibbs in the formulation of the theory of phases.

The various aspects and consequences of the universal opposition are developed by Heraclitus in a remarkably thoroughgoing fashion. (1) Contraries mutually imply each other, thus forming a single complete unity. "Hesiod is most men's teacher. Men think that he knew very many things, a man who did not know day or night. They are one."[1] "Couples are things whole and things not whole, what is drawn together and what is drawn asunder, the harmonious and the discordant. The one is made up of all things, and all things issue from the one."[2] "Good and ill are one."[3] (2) The opposites are constantly passing into each other. "Cold things become warm, and what is warm cools; what is wet dries, and the parched is moisted."[4] (3) Each opposite is indistinguishable without the other. "Men would not have known the name of justice if these things were not."[5] (4) An immediate consequence of this is a principle of great moment; namely, that opposites must be understood together. There is no incontestable evidence in the fragments that Heraclitus drew this inference;[6] but it lies so close to his center of interest that he can hardly have overlooked it. It means that there is not one theory of the warm and another of the cold, one theory of the dry and another of the wet, one of day and summer and another of night and winter. As the opposites are conjoined in reality, so they must be conjoined in knowledge. (5) But the most interesting application is found in Heraclitus's theory of values: "Good and ill are one." This proposition apparently has a

[1] Fr. 35.

[2] Fr. 59. Or, if we continue to read *συνάψεια*ς instead of *συνάψι*ες, "You should couple together things whole," *etc.*

[3] Fr. 57.

[4] Fr. 39.

[5] Fr. 60; evidently referring to acts of injustice.

[6] But see note 3.

double sense. In line with what we have just noticed is the interpretation, that good and evil are conjoined in each man's experience, passing into each other much like any other pair of opposites. "It is not good for men to get all they wish to get. It is sickness that makes health pleasant; evil, good; hunger, plenty; weariness, rest."[1] This is one of the Heraclitean doctrines which the Socrates of the *Phædo* has taken over. But also what is good for one is bad for another. "Swine wash in the mire, and barnyard fowls in dust."[2] "The sea is the purest and the impurest water. Fish can drink it, and it is good for them; to men it is undrinkable and destrucitve."[3] At the same time, all things, however good or bad, enter into one world, the ever-living fire, and all are in accordance with its constitutive law. Thus in relation to the world, nothing is evil. "To God all things are fair and good and right, but men hold some things wrong and some right."[4] This doctrine, that evil is relative to the limitations of the creature, has had historical consequences upon the importance of which it is not necessary to dwell. From the *Timæus* to our own day its influence has been unbroken.

Again, in the field of ethics and politics, Heraclitus is the author of theories almost equal in their importance and in the extent of their continued influence, to his theory of science. The fact must not be lost sight of that, writing at the beginning of the fifth century, he included reflections of this nature within the range of his systematic thought. For he is no mere proverbial moralist. He is as much the philosopher in his theory of practice as in his theory of the cosmic order; and, indeed, the two theories are most intimately conjoined.

His contributions in this field may, for the most part, be brought under two heads: *intellectual asceticism* and *intellectual aristocracy;* the latter, however, being his characteristic application of a far more general principle, that of the *life according to nature.*

Underlying all his practical philosophy is the conception, introduced into philosophy by Anaximenes, of the analogy between the macrocosm and the microcosm. The world, the Milesian

[1] Fr. 104. [2] Fr. 53. [3] Fr. 52. [4] Fr. 61.

had said, is a living, breathing being, and its breath is its soul. Heraclitus applies the conception to his own theory of the primal substance. In man, as in the cosmos as a whole, there are fire, water, and earth; and the fire is the soul.

The relation between the soul within and the soul without is described in a well-known account preserved in Sextus Empiricus.[1] The theory is an almost inevitable modification of that of Anaximenes, in accordance with the changed first principle. Anaximenes is right, of course, in supposing that the life in us is constantly fed from without; and he is right in fixing upon breathing as a way in which this process takes place. But breathing by itself is capable of maintaining only a low intensity of life. We breathe even in sleep. What distinguishes waking life, the life of active intelligence, is that the senses are open—as we see in the case of the open eyes, and as is evident enough in the renewed activity of the other senses—and that through them we come into a fuller contact and communion with the mind without. "Just, then, as embers, when they are brought near the fire, change and become red-hot, and go out when they are taken away from it again, so does the portion of the surrounding mind which sojourns in our body become irrational when it is cut off, and so does it become of like nature to the whole when contact is established through the greatest number of openings."

In man, as in the cosmos, the everlasting struggle between the opposites goes on; and here, as there, the opposition that really counts is that between fire and water. It is this which provides the general schema for the explanation of the rhythm of life, as it does for that of the rhythm of nature. And, in particular, it serves to bring under the one general conception the moral conflict. As generally, though by no means universally, in later Greek philosophy, the special activity of the soul is regarded as intelligence, or reason. Passion is viewed as something really foreign to the soul; it is impressed upon it from without. For Heraclitus, 'pleasure' is the activity of the water in man upon the fire: "It is pleasure to souls to become moist."[2] It is note-

[1] *Adv. Math.*, pp. 129 ff. Burnet has given a clear and simple rendering of the passage; *op. cit.*, p. 173.

[2] Fr. 72.

worthy that here, as so often in later usage, 'pleasure' means, not simply what we should mean by the term, but the indulgence of passion, a certain absorption in the satisfaction of appetite—what Browning in true Heraclitean fashion has called: "Sense quenching Soul." We are not surprised, therefore, at Heraclitus's attitude toward this phenomenon. It betokens for him the destruction of that which is most worthy in us. "Wantonness needs putting out, even more than a house on fire."[1] "It is hard to fight with one's heart's desire. Whatever it wishes to get, it purchases at the cost of soul."[2]

Thus already in Heraclitus[3] the intellectualistic ideal—the idol of the cave of the Greek thinker—asserts itself; and it finds expression in a withering contempt for the vast majority. "There are many bad and few good." Among the common herd the appetites have an absolute mastery: "Most of them are glutted like beasts." In a few noble instances, the one thirst for glory is dominant: "For even the best of them choose one thing above all others, immortal glory among mortals."[4] "Gods and men honor those who are slain in battle."[5] But a radically different type of man exists, exceedingly rare though it may be—one in which reason is supreme: "The dry soul is the wisest and best."[6]

That human wisdom is due to contact of human reason with the divine reason, is illustrated with especial clearness in the field of politics. The laws of cities, imperfect as they are, are the best of human possessions—"The people must fight for its law as for its walls"[7]—and they are derived from the laws by which the whole world is controlled: "For all human laws are fed by the

[1] Fr. 103.

[2] Frs. 105–107.

[3] Not improbably before his time. For the same ideal was present in the Pythagorean society and may have descended from their founder.

[4] Fr. 111.

[4] Fr. 102. Perhaps this fragment should be interpreted as conveying a higher praise than its juxtaposition with Fr. 111 would indicate. It was a familiar Greek conception that the supreme sacrifice of the soldier meant the subjection of all other impulses to the respect for law; and this, for Heraclitus, would be a subjection of passion to reason. Heraclitus is so ardent a militarist, that in his enthusiasm he may well upon occasion rank the soldier with the scholar.

[6] Frs. 74–76.

[7] Fr. 100.

one divine law."[1] Accordingly a criterion is found for the value of human laws: *they are good or bad as they accord or fail to accord with the universal tendencies of things.* The just law is that which, in this sense is in accordance with nature. Once more Heraclitus is the great initiator. At the dawn of science he already employs—if he does not openly proclaim—a principle, which for good or ill has profoundly influenced the later course of speculation.

Heraclitus's own special application of the principle—apart from his militarism—is to the criticism of democracy and the defence of the rule of the "one wise man." In the first place, the differences of rank among men are a consequence of the universal struggle. "War is the father of all and the king of all; and some he has made gods and some men, some bond and some free."[2] Thes differences are natural and necessary, and therefore right. But, furthermore, it is natural law that those who know, however few they may be, should direct those who do not know. The validity of knowledge is altogether independent of the number of those who possess it. The truth is not to be determined by counting heads. "One is ten thousand to me, if he be the best."[3] Hence—"It is law, too, to obey the counsel of one."[4] Democracy is the very inversion of justice. It is the leveling-down of the state to the stature of the mob. Its most prominent trait is the intolerance of superior ability. "The Ephesians would do well to hang themselves, every grown man of them, and leave the city to beardless lads; for they have cast out Hermodorus, the best man among them, saying, 'We will have none who is best among us; if there be any such, let him be so elsewhere and among others.'"[5] Here, too, Heraclitus anticipates the Socratic-Platonic doctrine.

One of the three portions of Heraclitus's treatise was devoted to his religious teaching. If reason in man is fire, so the universal fire is reason. The "thought that steers all things through all things" is thought like ours. But it is more than that: it is ideal thought. "The way of man has no wisdom, but that of

[1] Fr. 91 b.
[2] Fr. 44.
[3] Fr. 113.
[4] Fr. 110.
[5] Fr. 114.

God has."[1] "Man is called a baby by God, even as a child by a man."[2] The cosmic order is supremely beautiful and excellent: "The wisest man is an ape compared to God, just as the most beautiful ape is ugly compared to man."[3] Accordingly, in the double interest of clear thinking and decent living, the popular religion (and the poets as its expounders) are bitterly assailed. In this attack Heraclitus is preceded by Xenophanes, and he goes beyond him only in the fierceness of his satire.

But in Heraclitus's treatment there is this that is distinctive: that the criticism is intimately connected with his theory of science. He will not admit any *authority* whatsoever, except the witness of reason itself. The most revered poets have, as a matter of fact, been ignorant of the very elements of wisdom.[4] But even in his own case he is careful to say: "It is wise to hearken not to be but to my Word."[5]

In the details of the criticism, it is noteworthy that the Olympian and the Dionysiac religions fall equally under his condemnation—or that if either is more severely handled it is the latter. The notion of Zeus may, indeed, be regarded as a foreshadowing of the truth. But, "The mysteries practiced among men are unholy mysteries,"[6] the phallic hymn is "shameful";[7] in their sacrifices, "they vainly purify themselves by defiling themselves with blood,"[8] in their prayer to the images, it is "as if one were to talk with a man's house."[9] Even the rites of burial are irrational: "Corpses are more fit to be cast out than dung."[10] Intellectual emancipation never went beyond this. But perhaps the most perfect expression of Heraclitus's rationalism is to be found in the following brief phrase: "Man's character is his fate (δαίμων)."[11] The old magico-religious conception of a supernatural control over individual destiny is a delusion. The sources of happiness and misery are not to be looked for in such a power, but in the natural individual himself.

To the ancient popular consciousness, the most striking feature of Heraclitus's philosophy—aside from its obscurity—was

[1] Fr. 96.
[2] Fr. 97.
[3] Frs. 98–99.
[4] Frs. 35, 45.
[5] Fr. 1.
[6] Fr. 125.
[7] Fr. 127.
[8] Fr. 129.
[9] Fr. 126.
[10] Fr. 85.
[11] Fr. 121.

its pessimism. He was the 'weeping philosopher.' Certain of the fragments amply justify the characterization. Yet we have seen him upholding the doctrine that the world as a whole is perfect —that for God all things are right and good. How are such optimism and such pessimism reconcilable, and how, indeed, are they reconciled?

It requires no very deep examination to show that they need no reconciliation—that they are substantially the same doctrine. For we see that 'good' in relation to the world means simply 'in accordance with the universal law of nature'; and the supreme law, if Heraclitus is right, is that every change is balanced by an equal and opposite change. All human efforts are self-annulling. Every victory is a father of defeat. Not only do all things flow, but all things *turn;* and, as Heraclitus says, "In the circumference of a circle the beginning and the end are common."[1] There is no real progress, no genuine accomplishment. The course of history is but the endlessly repeated alternation of birth and death. "Man is kindled and put out like a light in the nighttime."[2] "When they are born, they wish to live and to meet with their dooms—or rather to rest—and they leave children behind them to meet with their dooms in turn."[3] It is all good, in the sense that it is all *regular;* but it is also absolutely *idle.* "Time is a child playing draughts"—without care or forethought, moving us poor 'men' about his checkered board—"the kingly power is a child's."[4]

The formula of optimism and the formula of pessimism are one and the same: *this* is the best of possible worlds.

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[1] Fr. 70. [2] Fr. 77. [3] Fr. 86. [4] Fr. 79.

THE MECHANICAL VERSUS THE STATISTICAL INTERPRETATION OF NATURAL LAW.

IN recent idealistic philosophy there has appeared an instructive divergence of view with regard to the interpretation to be given to the conception of a law of nature. This difference becomes of especial interest when it is seen to follow as a consequence of an important disparity in the philosophic methods employed by writers who profess common allegiance to the name and principles of idealism.[1] On the one hand, there appears among certain representatives of idealism a tendency to seek truth by withdrawal from the external world to inner consciousness as to a center; and with this there also goes the abandonment of external nature in a measure to the contingent and the inexplicable. On the other hand, there are idealists who look outward rather than inward, who seek truth and values as objective in the actual world, and assume the real to be everywhere the rational. In this paper it is proposed to direct attention to the conflicting views of these writers only in so far as their views find expression in opposing interpretations of natural law. It will be seen that this opposition shows itself in essentially divergent interpretations of nature, leading on the one hand to a statistical view of natural law and on the other to a conception that is in principle mechanical.

The statistical view, as found in Ward and Royce, may first be examined. These writers assert the statistical character of natural law in two senses: first, that natural laws as formulated by the sciences are constructions of subjective consciousness; and second, that they also represent real processes of external nature. The view that natural laws are fundamentally subjective, are the methodological fictions of science, is familiar enough. Most of the laws formulated by science are admittedly no more than rough approximations to the real processes of nature. They are

[1] *Cf.* J. E. Creighton, "Two Types of Idealism," PHILOSOPHICAL REVIEW, Vol. XXVI, pp. 514–536.

only "present methods of bookkeeping, convenient conceptions whereby we summarize observed facts. . . . But they are not . . . known to express anything final."[1] Furthermore, most scientific laws are based on averages struck from large numbers of facts taken together, and claim to hold true only with a certain probability as regards any particular case. "Many of the constants of science," says Ward, "are of the nature of statistical averages."[2] And Royce, affirming the statistical character of scientific knowledge, declares that it is the "type all of the organic and social sciences, as well as most aspects of the inorganic sciences, illustrate;" and that he finds it "hard to exaggerate the importance of those methods and of those ideas of natural science which are definable in terms of approximation and of probability."[3] Recognition by these thinkers of the statistical character of scientific law is due in part no doubt to their knowledge of recent science.[4] Within the past century, success has been claimed for statistical methods in widely varied fields, such as kinetics, molecular physics, biology, meteorology and economics.[5] All these sciences deal with data collectively; their laws are said to be rough averages struck from large collections of facts and to hold true only approximately and with a certain degree of

[1] J. Royce, *The World and the Individual*, 2d ser., pp. 215–216.

[2] J. Ward, *The Realm of Ends*, p. 66.

[3] Royce, *Science*, Vol. XXXIX, p. 562, p. 559.

[4] In particular both are indebted to the views of Clerk Maxwell.

[5] *Cf.* Merz, *History of European Thought in the Nineteenth Century*, Vol. II, Ch. XII. It is indeed striking to find scientists in such widely separated fields as physics and biology—the sciences of matter and of life—alike claiming the use of statistical methods. Clerk Maxwell, speaking for physics, says, "If the molecular theory of the constitution of bodies is true, all our knowledge of matter is of a statistical kind." (Campbell and Garnett, *Life of James Clerk Maxwell*, p. 439. Quoted by Merz, Vol. II, p. 600.) In other words, if modern physics is right in holding that the smallest bit of matter we know, is composed of millions of imperceptible particles in motion, then it is maintained, all our knowledge of matter must be collective and statistical. Turning to biology, we find Galton, one of the first men to apply statistical methods to problems of heredity and variation, declaring: "The word man, when rightly understood, becomes a noun of multitude, because he is composed of millions, perhaps billions, of cells, each of which possesses in some sort an independent life. The doctrine of Pangenesis [originally formulated by Darwin] gives excellent materials for mathematical formulas, the constants of which might be supplied through averages of facts." *Hereditary Genius*, 1892, pp. 349–350. Quoted by Merz, Vol. II, pp. 612 ff.

probability in any individual instance. On the other hand, these thinkers in affirming the purely statistical nature of scientific law are no doubt partly influenced by their metaphysical prepossessions. Both Ward and Royce are convinced, on metaphysical grounds, that the world is ultimately composed of freely acting individuals. Hence they are forced to seek an explanation for the fact that science ignores such freedom and individuality and deals almost exclusively with constants and uniformities. The explanation ready at hand is that scientific laws are statistical and subjective in character. In adopting this interpretation, these thinkers abandon the claim that scientific laws represent concrete individual things as they are. On the contrary, they emphasize as the peculiar virtue of statistical laws that they lend a convenient semblance of regularity to facts which are in their nature of very different character. Statistical methods can generate the appearance of uniformity from groups of the most varied and changing particulars. This is clearly evident in the social sciences; in this field the laws ignore the peculiarities of individuals, leaving room beneath for a wide play of spontaneity and contingency. Similarly, the laws of other sciences, being statistical constants, never express the exact truth with regard to any particular case. They are pragmatic devices which serve to make a disorderly collection march in a regular manner. But their subjective and abstract character should never be forgotten, nor these rough averages mistaken for objective laws of nature or for exact descriptions of concrete fact.

At the same time, a statistical tendency is regarded (not without inconsistency) as a process in external nature. In the words of Royce, there appear to be "literally verifiable but not literally constant laws of observable Nature."[1] These laws seem undefinable in mechanical terms, yet can be expressed as statistical tendencies. And Professor Ward apparently concurs, citing from Lotze a statement that statistical formulæ, while inexact with regard to particulars, "can yet claim to express the *true law of history* as freed from disturbing individual influences."[2] Royce

[1] *The World and the Individual*, 2d ser., p. 223.

[2] *Naturalism and Agnosticism*, 3d ed., Vol. I, p. 111. Italics mine. For Ward, of course, "the actual is wholly historical." *Op. cit.*, Vol. II, p. 281.

further develops this idea of the statistical character of historical progress. The well-known disposition to explain human history in terms of 'historical tendencies' and 'historical forces,' he believes has long testified to the inexact and unconscious use of statistical methods. "In fact," declares Royce, "the term *tendency* is, in every exact usage which you can give it, an essentially statistical term. To say that *a* has a tendency to lead to *b* is to declare that a more or less certainly and definitely known proportion of events of the class *a* are followed by events of the class *b*."[1] All the sciences which deal with tendencies (in other words, with 'forces,' with growth and evolution) are then essentially statistical. Moreover, it is claimed that their statistical principles reach beyond mere subjective validity and "go down to the roots of that nature of things which our sciences are studying."[2]

Because he believes that statistical knowledge, though "only probable and approximate," is somehow "positive" and grips the objective nature of things, Royce holds that it is the ideal method of scientific enquiry. "The statistical form," he says, "is the canonical form of scientific theory."[3] Discovery of the wide range and use of statistics marks the greatest advance in inductive method. Statistical results interpreted by the laws of chance can furnish definite conclusions with a certain probability of truth with regard to any set of facts in the universe. The method for arriving at such statistical knowledge Royce calls "the Organized Combination of Theory and Experience."[4] All that is necessary in order to employ this method is to assume that the set of facts to be examined has a *determinate constitution*, and then to 'sample' the collection of them. Once we "grant the single principle of the determinate constitution of any finite set of facts of possible experience, we can draw probable conclusions regarding the constitution of such a set of facts, in case we choose 'fair samples' of this collection."[5] The 'fair sample' is explained

[1] Royce, *Science*, Vol. XXXIX, p. 559.

[2] *Ibid.*

[3] *Ibid.*, p. 562.

[4] *Encyclopædia of the Philosophical Sciences*, Vol. I (Logic), Eng. trans., p. 78. The name is somewhat confusing, yet at least distinguishes this procedure from the traditional statistical methods of logical text-books. It remains, in spite of its use of hypothesis, essentially a statistical method.

[5] *Op. cit.*, pp. 83–84.

simply to be any member selected at hazard (*i.e., without any particular reason*) from a large collection. By the magic of this simple procedure, we can obtain positive (although only probable and approximate) knowledge concerning any facts within the breadth and scope of experience. "It is possible to judge by samples the probable constitution of otherwise unknown cargoes of wheat or of coal, the general characteristics of soils, of forests, of crowds of people, of ores, of rubbish heaps, of clusters of stars, or of collections of the most varied constitution."[1]

In spite of these statements and others of a similar character which might be quoted, I believe that examination proves that Royce's canonical form of statistical method is not really a method by which science can grasp literal and objective truths of nature. In the first place, Royce, although he has previously rejected the Uniformity of Nature as a guide to inductive knowledge,[2] here claims as the *sole necessary postulate* of his method the granting of a 'determinate constitution' to the set of facts to be examined. But the postulates of uniformity and 'determinate constitution' would seem to come to the same thing. Secondly, a fundamental postulate of the method of which no mention is made, is the assumption that the law of chance is objective, that if a collection be large enough, in the 'long run' the 'sampling' will yield the character of the whole collection. This assumption makes 'chance,' 'indefinite quantity,' and 'ignorance' the grounds of knowledge.[3] Chance figures as a fundamental concept in a method based on the selection of samples at hazard. Indefinite quantity appears in the concepts of the 'long run' and the 'large collection.' Ignorance of any definite ground is made a principle of selection, in the assurance that a sample of facts chosen *without any particular reason* will be a fair one. Now we are surely justified in rejecting a method which bases knowledge on concepts that exclude the very form of knowledge. Such cannot be the canonical form of scientific theory. And while application of

[1] *Ibid.*, p. 84.

[2] *Ibid.*, p. 82.

[3] *Cf.* the writer's monograph on *Some Modern Conception of Natural Law* (Cornell Studies in Philosophy, No. 12), p. 77, Longmans, Green, 1920.

such a method might elicit certain useful results with regard to the numerical proportion of factors in a simple aggregation of instances, it could furnish no real understanding of more complicated, organic collections, where the information sought is rather qualitative and concerns the relation of parts within a concrete system.

According to Ward and Royce, a statistical tendency is the leading character of evolution as a process in external nature. As expressed by these writers, the dominant feature of evolution is a tendency to 'mutual assimilation,' to a 'fecundity of aggregation'[1] and 'integration of new properties in the whole.'[2] This integrative impulse of nature seems to express itself as a statistical progression. Phenomena assimilate to each other with a frequency roughly in accord with probability and the laws of chance. The direction of the statistical process is away from chance toward organization; and organization is a concept weighted with a teleological significance. According to Ward, "The process throughout is that of trial and error. . . . Contingency . . . is inevitable. . . . Still through all a steady tendency is apparent to replace this mere contingency by a definite progression. . . . With this progression we are familiar under the name of evolution. . . . What is thus created are not new entities but new values."[3] The process of evolution is then an integrative tendency away from chance toward order and values. Progress is by natural selection,[4] yet the unknown goal or goals of the process are assumed to have teleological significance. Royce sums up this view of evolution in more detail: "In brief, the evolution of stars, of elements, of social orders, of minds and of moral processes, apparently illustrates the statistical fecundity of nature's principal tendency—the tendency to that mutual assimilation. . . . Now it is this principle of the fecundity of aggregation which seems to be the natural expression, in statistical terms, for the tendency of nature towards . . . a purposiveness whose

[1] Royce, *Science*, Vol. XXXIX, p. 565.

[2] *The Realm of Ends*, p. 434.

[3] *Ibid.*, pp. 433–434.

[4] *I.e.*, by 'trial and error' and the "objective realization of adaptations that were never subjectively intended." *Op. cit.*, p. 79.

precise outcome no finite being seems precisely to intend."[1] According to such accounts, the bridge from chance to teleology seems to be a statistically definable natural selection. This statistical tendency is further described as a disposition toward mechanization.[2] However, evidences of mechanization do not imply that nature is mechanical, according to these thinkers; they rather imply that it is personal in character. Tendencies to mechanism in the physical world are oddly explained as nature's 'habits' and lapses from consciousness into automatism. The "routine and uniformity" of nature, says Ward, can be "explained on the analogy of habit and heredity in the individual;" and he quotes approvingly the words of C. S. Peirce that "matter is effete mind, inveterate habits becoming physical laws."[3] Disregarding the personalistic implications in such an interpretation of nature, the point for our purpose is that nature is here described as tending away from consciousness toward automatism and dead routine. This introduces a new aspect of statistical evolution. The statistical tendency is now seen to involve a twofold process: on the one hand, the devolution of conscious purposes into irrevocable mechanisms, and on the other hand, the evolution of a teleological order out of contingency. The question might be raised whether these opposite interpretations of the statistical tendency can be reconciled in the systems under discussion. If the goal of evolution be the fulfillment of purpose, can it be achieved through the degenerations of purpose? Again it might be questioned whether the facts of science verify a statistical progression in nature, and whether the curious conception of natural laws as psychical acts that have become automatic is not too suggestive of personalistic preconceptions in metaphysics.

In the writings of Ward and Royce, four lines of argument may be distinguished which support the statistical view of nature

[1] Royce, *Science*, Vol. XXXIX, p. 565.

[2] *The Realm of Ends*, p. 74; Royce, *Science*, Vol. XXXIX, p. 565.

[3] *The Realm of Ends*, p. 74. Royce also interprets signs of mechanism as 'habits' of nature. "This process of evolution will then lead from mere chance towards the similation of mechanism, from disorderly to a more orderly arrangement, not only of things and of individual events, but of the statistically definable laws of nature; that is, of the habits which nature gathers as she matures." *Science*, Vol. XXXIX, p. 565.

and natural law. The first is based on the claim just discussed of a statistical progression in evolution; the second, on the assertion noted that the uniformities discovered by the leading sciences are in type statistical. The third is a group of arguments directed against the mechanical view of nature and offered—on the assumption of a strict alternative—as proof of the statistical view. This third group of arguments also brings up the point that a mechanical view would reduce the world to homogeneity, whereas it is only heterogeneity and qualitative difference which enable us to distinguish things from each other.[1] Moreover, the search for homogeneous elements leads to abstraction, and mechanism thereby fails to account for the rich variety of life and nature.[2] Lastly, these arguments charge that mechanical theories involve an unwarranted assumption, being based on an ideal of exactitude which experience never verifies. "Mechanical theories are in their essence too exact for precise verification," says Royce. "Hence, since they demand precise verification, we never know them to be literally true."[3] And Ward states the matter similarly: "In the exact sciences, within the limits of our powers and subject only to the laws of thought—we are complete masters of the situation. . . . But applied to the particulars of experience such conceptions have no warrant."[4] Mechanical theories, then, are not really true; they lay claim to an exactness never verified in fact, and thus are self-contradictory.

The fourth argument advanced in favor of the statistical view of nature and natural law is one first enunciated in principle by Clerk Maxwell,[5] and here cited in the form developed by Ward.[6] It is the argument from the analogy of physical laws to social statistics. On the assumption that statistics is the predominant method of the social sciences, it is claimed that it is similarly the chief method of physics. Statistical averages can hide, under a semblance of uniformity, the greatest variety in the individuals.

[1] *Naturalism and Agnosticism*, 3d ed., Vol. I, p. 151.

[2] *Ibid.*, pp. 152–153.

[3] Royce, *Science*, Vol. XXXIX, p. 562.

[4] *Naturalism and Agnosticism*, 3d ed., Vol. I, p. 138.

[5] Campbell and Garnett, *The Life of James Clerk Maxwell*, pp. 438 ff.

[6] *Naturalism and Agnosticism*, 3d ed., Vol. I, pp. 109–111; *The Realm of Ends*, pp. 65–66, also p. 433.

The aggregates of the social sciences, for instance, conceal beneath them the diversity and spontaneity of animated beings. Now "the physicist, like the statist, is always dealing with aggregates, but unlike the statist he finds *the constituent individuals to be beyond his ken.*"[1] The atoms and molecules of the physicist are too minute and their collections are too vast for separate study. But even though the particulars are beyond his ken, it is argued from analogy and the principle of continuity that the ultimate units of the physicist must be also unique, spontaneous agents. The conclusion is that the universe is made up throughout of such psychical individuals, acting in accordance with free will and contingency. And as conative agents and as sources of contingency, they must be studied as social phenomena, by means of the concepts of average, probability and approximation,—in other words by statistical methods.

The statistical character of the physicist's laws is often denied. The fact of this denial is explained by these thinkers as due to the character of the physicist's data. Because the constituent individuals with which he deals are beyond direct knowledge, the physicist often fails to recognize both that he is dealing with individuals, and that his laws are simply averages expressing the behavior of vast collections of individuals. Instead, he makes the mistake of regarding his statistical constants as iron necessities. This mistake is hardly to be wondered at in physics, says Professor Ward, since it occurs even in the social sciences, where the character of the data is less concealed. "Now, if, when both the varying particulars and the statistical constants are alike well-known [*i.e.*, as in the social sciences], it is possible for a reasonable man to fall into the error of converting the one into an iron necessity which rules over the other, no wonder this should be the prevalent attitude in departments of knowledge where the particulars are beyond our ken."[2] From this illusion of iron necessity there arises the physicist's mistaken belief in mechanism and a mechanical nature. Yet if he would only recall the similar methods of the social sciences, he would recognize his physical constants to be mere statistical approximations, holding

[1] *Op. cit.*, p. 66. Italics mine.

[2] *Naturalism and Agnosticism*, 3d ed., Vol. I, p. 111.

only in general and not of each particular case. Thus the argument seeks at once to dispose of mechanism by substituting the statistical interpretation. Since statistical methods are employed in dealing with vital phenomena,[1] and since the phenomena we know best seem best studied in large collections, analogy would suggest that in physics (with much vaster collections) the same methods are actually employed; while the principle of continuity would lead on to the idea that physics is likewise concerned with what is vital and unique.

Now, it is obvious that this whole line of argument rests on the assumption that the methods of physics are statistical *in the same sense* as are the methods of the social sciences. But this is just the point that may be seriously questioned. In social statistics, you are able to strike an average because you have direct access to the particulars, and knowledge of them. Averages are based on collections of real individuals. But in dealing with molecules, particles beyond direct experience, you cannot get a genuine average just because you do not have a collection of real individuals. In fact, the individuals as such are quite unknown, being *ex hypothesi* 'beyond our ken.' You cannot, then, talk about the 'average atom' in the same sense in which you can talk about the 'average man.' Strictly speaking, molecules are 'manufactured' articles, hypothetical constructs of the scientific imagination; and as such are not derived by generalization from experience as are genuine statistical constants. To a layman, the method implied by the molecular theory of matter would seem rather a hypothetical and a mechanical method than a statistical one. For, in the first place, the theory is apparently non-empirical and defines its units as homogeneous prior to experience; no attempt is made to learn the character of material particles by generalization from definite empirical collections. Secondly, no scope is left for the calculation of probabilities, such as would be required by a statistical method; instead absolute necessity is postulated *a priori* in the movements of the particles.

[1] "The logic of the insurance actuary is essentially the same as the logic which is consciously or unconsciously used in dealing with all forms and grades of vital processes." Royce, *Science*, Vol. XXXIX, p. 558.

Dr. Bosanquet has subjected the argument from the analogy of physical laws to social statistics to a searching criticism. He maintains that the analogy is false, since in physical statistics, where we deal with minute particulars, it is impossible to get *true constants* such as are possible in social statistics. A true constant is an average derived from a *comparison of averages*; also it is an average based on *groups that in some way differ*.[1] Such averages are possible in social statistics, where individuals are capable of separate measurement and where also the groups selected for examination may differ. But they are impossible in dealing with minute physical elements, which are *ex hypothesi* homogeneous. Hence the analogy between the kinds of statistics breaks down. While this criticism seems to me valid, I think it can be carried further. Dr. Bosanquet assumes that the physicist *can* arrive at an average representing minute physical elements. But it seems questionable whether there can be any real average of elements where the individuals are beyond separate measurement. The crux of the matter is neither that groups must be *compared* nor that they must *differ*. These are considerations connected with defining a law by the causal Method of Difference and are of secondary concern here. The essential point is that when physics undertakes to deal with minute physical elements, it enters apparently a realm where separate individuals are beyond measurement and beyond its ken. This renders it impossible that genuine averages or statistical methods like those of the social sciences should be employed.

As we have seen, Royce and Professor Ward have opposed mechanism on the ground that the variety and adaptation of our universe cannot be understood as resulting from the quantitative relations of homogeneous elements. Hence they have chosen a statistical view, referring the source of law to the activity of psychical individuals and to the laws of chance. The appearance of mechanism they "analyse," as Bosanquet remarks, "into degenerated finite teleology, on the analogy of secondary automatism."[2] Now, in spite of many points of divergence from these thinkers,

[1] Bosanquet, *The Principle of Individuality and Value*, pp. 86–87.
[2] *Ibid.*, p. 142.

Dr. Bosanquet agrees with them in rejecting as inadequate the mechanical view which would reduce the world to homogeneous elements. Professor Ward has clearly shown in the first volume of *Naturalism and Agnosticism* that an uncritical mechanism in science leads to a self-refuting materialism.[1] Dr. Bosanquet is no less anxious to deny mere materialism, yet hopes to preserve mechanism by freeing it of the old spatial analogy and interpreting it more broadly in a 'sense akin to system.'[2] The essence of mechanism is not that the world consists of extension or physical substance. Rather, "the essence of it is that the world consists of elements, complete in themselves, and yet determined in relation to elements beyond them."[3] What matters is not the *kind* of element, but the fact that each claims to have a nature of its own, and that they are determined *ab extra* by relations. These are the characteristics of system. And if mechanism is system, then the nature of the elements is a secondary problem, to be settled by 'the plain probability of the facts.' The important point is that system assigns control to the content as a whole, and not to some bare directing force or element. Moreover, as system, mechanism implies unity in difference, a heterogeneity organized by relations, and not a collection of homogeneous elements.

Another charge brought against mechanism by Professor Ward and by Royce is that mechanism claims an exactitude in its laws never verified by experience. From the standpoint of concrete idealism, such a charge bespeaks a fundamental misunderstanding as to the nature of law. True, the ideal mechanical law is never exactly realized in the particular case. But this is because laws are universals; facts as such are particulars. Both remain themselves and are not interchangeable. The truth of mechanism implies that the *ideal* laws and the *facts* of experience are complementary; that there is 'equivalence' between them; but neither can be reduced to terms of the other. The unattainableness of the ideal law, then, means no more than that the ideal cannot be shorn of its ideality and reduced to common fact. The mechan-

[1] *Naturalism and Agnosticism*, 3d ed., Vol. I, pp. 143–144 especially.

[2] Bosanquet, *Proceedings of the Aristotelian Society*, N. S., Vol. XII, p. 243.

[3] *The Principle of Individuality and Value*, p. 73.

ical law remains the organizing principle, the informing ideality of facts, yet is itself no mere empirical fact.

One of the most interesting aspects of Dr. Bosanquet's view is his contention that mechanism is the only principle of law which preserves 'individuality and value' and the rights of the spirit. Here he challenges direct comparison with thinkers who, fearful of the logical consequences of the sciences, have urged that if the spiritual values are to be conserved, the world cannot be a mechanically intelligible whole. Accordingly, it has seemed necessary to discredit exact law and the Uniformity of Nature by citing instances of apparently irregular phenomena and the caprices of individuality. In opposition to this view, Dr. Bosanquet maintains that "it is the true spiritual view which regards Nature as mechanically intelligible."[1] For only a rationally organized world can sustain the existence of eternal values. Moreover, the principle of the rational order of nature is simply the principle of mechanism or of the Uniformity of Nature stated in the broadest terms. Mechanism or uniformity implies that nature is a system ordered in accordance with logical relevancy and causal connections. "The Uniformity of Nature is here taken as a logical postulate, equivalent to the Law of Identity as interpreted into the Law of Sufficient Reason."[2] It is only in such a mechanically concatenated world, that is, in one transparent to the law of causation or sufficient reason, that individuality, value and law itself can be realized.

In describing his conception of mechanism, Dr. Bosanquet calls attention to the fact that it implies a double relationship, involving both quantity and quality. He says: "The idea of mechanism here accepted is one which neither reduces the universe to modifications of homogeneous quantity, nor yet impeaches the 'uniformity of nature,' and the general quantitative relations underlying natural phenomena. It accepts as the apparent custom of the universe and as a corollary of the interdependence of content and system the principle that *qualities have quantitative connections,* and that a high degree of spiritual or emotional expressiveness accompanies a high degree of complexity and intel-

[1] *Op. cit.*, p. 140.
[2] *Ibid.*, p. 138.

ligible determinateness."[1] In such a statement, the mechanical principle is interpreted as involving the consistent correlation of quality with quantity. Sometimes Dr. Bosanquet distinguishes this view more particularly by the term 'equivalence.' By this he means that the type of relation found in individuals everywhere is one of *qualitative wholes in quantitative counterparts;* or, in other words, that "teleological wholes are inevitably constituted by what may fairly be called mechanical relations."[2] A concrete instance of the equivalence of the qualitative with the quantitative according to the mechanical principle is the equation of the comparative intensity of two colors with the relative amplitude of their ether waves. The qualitative and the quantitative are complementary, having in them the same principle; yet they remain arithmetically incommensurable and irreducible to homogeneous units. They can, however, be correlated as ratios, as in the example cited, where the intensities of the colors are proportional to the width of the ether waves. Equivalence also implies determination by the whole. Neither the psychical nor the physical can be the guiding force. Both the qualitative and the quantitative are compelled by the system in its entirety. It is always the Whole which operates upon the parts, and which, together with their response to its common logical principle, constitutes natural selection.[3]

Even to mind itself, Bosanquet says, "no injustice could be done by connecting it with a physical counterpart, and equating

[1] *Op. cit.*, p. 140. Italics mine.

[2] *Ibid.*, p. 161.

[3] Natural selection, on the statistical view, appears as a compound of the individual's conation, the particular environing obstacles and the laws of chance. On the mechanical principle, natural selection is described as the pressure of the total universe as brought to bear on the individual in any given situation. Its operation is through the law of causation, which viewed non-temporally is identical with the principle of relevancy or sufficient reason. Referring to natural selection as the power of direction exerted by the total universe, Bosanquet says: "The bearing and result of these considerations would be to lay greater stress on a factor which might be called in a very wide sense 'natural selection,' that is to say, on the moulding of the organic world, and even the world of mind, in relation to the environment which we know as physical Nature. . . . *The suggestion would be that the universe is, as a whole, self-directing.*" (*Op. cit.*, pp. xxiv–xxv. Italics mine.)

it with a sum of mechanical energy."[1] He repudiates the notion that consciousness is outside the range of mechanism or that it introduces a spiritual force antagonistic to natural law. "The mechanical appearance must be granted universal and unbroken."[2] Consciousness itself is essentially in its action "no more than a coöperative mechanical force."[3] In plain language he rejects the admixture of consciousness and chance utilized by the statistical view. "It is idle," says Bosanquet, "to appeal to finite purposive consciousness as . . . the source through its fossilized habits, of what is construed as a mechanical 'nature.'" "On the one hand, it is ridiculous to say that such a product [as a flower] arises *by accident;* that is, as a by-product of the interaction of elements in whose nature and general laws of combination no such result is immanent." "On the other hand, we must not say that 'purpose is operative' in the flower or the wave, if that is to mean that we ascribe them to an end or idea, somehow superinduced . . . by a power comparable to finite consciousness . . . out of a *detached spontaneity* of its own."[4] The purpose which Nature fulfils is an immanent one; it is latent in the whole universe and operates through the pressure of the total environment on the individual. Growth by this sculpturing-process of the Whole is what is signified by evolution or natural selection. Its law is mechanical in the sense that it is based on the principle of sufficient reason as translated into causation and the Uniformity of Nature.[5] To ascribe the work of natural selection to mere consciousness as such is absurd. Works like those of consciousness are achieved quite beyond the guidance of any consciousness as we know it, as for instance in the growth of a coral-reef colony or in the age-long developments of art and civilization.[6] No less absurd is the explanation of natural selection through laws of chance. Nature high and low gives us too strong an impression of systematic relevancy. The motions of the solar system,

[1] *Ibid.*, p. 178.

[2] Bosanquet, *Proceedings of the British Academy*, 1905–1906, p. 240.

[3] *The Principle of Individuality and Value*, p. 164.

[4] *Ibid.*, pp. 146–149. Italics mine.

[5] *Ibid.*, p. 119. "The Uniformity of Nature or principle of Relevancy means that every variation is a member in an intelligible system."

[6] *Ibid.*, p. 152.

the curl of a wave, strike us as meriting a presumption of teleological value only less than that of consciousness itself.[1]

In concluding this article, it may be recalled that for Royce and Professor Ward the type of law is statistical. This implies that the expression of the law is achieved through sampling large collections with the hope that in the long run (in default of any knowledge why variations should occur) all unknown causes will be included with equal frequency, thereby cancelling them; and approximate knowledge and uniformity will result. For Dr. Bosanquet, on the other hand, law embodies a mechanical principle under the form of equivalence. Equivalence correlates the qualitative phenomenon with its relevant quantitative conditions. The ideal of law is not to smooth over and compensate for the particular instance by losing it in a vast collection, but to correlate the particular individual with its intelligible conditions, thereby according it place and value in the whole system in accordance with relevancy or the Uniformity of Nature.

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[1] *Op. cit.*, p. 147.

THE OBJECTIVE ELEMENT IN ESTHETICS.

IT may seem like heresy to assert a foundation for esthetics in nature, yet careful consideration of the evidence makes it clear that there is something in the things called beautiful which is needed to explain the pleasurable sensations we have in contemplating them. Categories of objective difference and likeness must be assumed at the outset, and of these difference is the prerequisite of consciousness. An impression which persists gradually loses its power to impress; an object continually seen gradually becomes invisible; a sound continually heard at last ceases to be noticed. If all objects were likes to each other we should have no means of cognizing them, while if they differed totally from each other they could not be segregated into classes and knowledge of them would be impossible. For this there are required at once the superficial difference which complies with the law of consciousness by producing the shock we call feeling, and the fundamental likeness which is needed for cognition. Knowing even to this extent is pleasurable, and the discovery of likeness at the very heart of difference is the real source of the esthetic satisfactions. All the while the subjective procedure is a direct outcome of the objective process. With qualifications and amplifications understood, motion is produced away from directions of greatest stress towards directions of least stress. Change thus oriented is the easiest in both inanimate and animate; taking place as activities of the organism it gets the idealization of feeling and is not only the easiest but also the most agreeable. There is a degree of pleasure when an object is recognized; there is more of it when separate objects are perceived as likes; the pleasure is greatest when the mingling of difference with likeness, the triumph of likeness over difference, take complex forms.

An example may be selected from decorative art, whose like patterns are regularly varied by difference. If iteration were all —if it were merely a question of saving effort by mere repetition

—then a series of dots or parallel lines would be the most beautiful object man could contemplate. The effect of beauty is gained in much more intense form when the likeness is complicated with difference. There must be iteration to constitute a beautiful pattern, but there must also be variety to save it from becoming monotonous. It is the orderly union of likeness and unlikeness which makes the square more beautiful than the straight line, the circle or sphere more beautiful than the square. A twirl of the hand and the circle is drawn, however imperfectly; a square requires four movements, each separately and differently directed. In the line there is no variation—simply an advance in space; the circle continually changes direction and yet through all changes preserves its roundness, each part of it at once like and unlike every other. It is in circles, spirals and curved lines generally that we obtain the utmost maximum of the likeness which makes for ease of cognition, with the utmost minimum of the difference which is needed for the appeal to consciousness. And it is largely for this reason that curved forms such as are met with in the sweeping lines of great bridges, or in the archways of cathedrals, excite the esthetic sense and give pleasure to the beholder.

The symmetries of design afford other illustrations of the interplay between the requirement of likeness and the demand for difference. The eye rests with greater pleasure on a scheme which is symmetrical than upon one in which the figures are irregularly spaced and of unlike shape. Cognition of such a scheme is easier. Its elements recruit each other, differing as they do so; the mind returns, if in slightly varied ways, to the elements it has already perceived; it is saved the effort to readjust itself to something totally new, and is at the same time challenged by something different woven into the texture of the old. The symmetrical pattern in which like elements recur is thus more intelligible, pleases more, strains the cognitive faculty less than would a pattern founded wholly on difference. All this is shown, not only in the simpler forms of decorative art, where the elements are little more than repetitions, but also in the elaborate patterns which, made up of elements that at once vary from and resemble each other, constitute so much of the beauty of architecture.

Structures which nature fashions or come forth at the call of man also show the arrangements that underlie esthetics. Organs most fitted to their work, such as secure the highest degree of efficiency and economy for maintenance, show curved, iterated, symmetrical or otherwise self-assimilated forms, and therefore excite more or less pleasure in the beholder. The beauty of the crystal, the tree, the honeycomb, the spider's web, the bird's wing, does but reappear in the bow, the scythe, the gearing of machinery, the screw of the propeller, the blades of the ventilating fan, as the concomitant of economical, efficient, maintenance-securing appliances. George Iles writes: "In stairways the boards on which we tread now meet in smooth curves; so do the walls of rooms as they reach ceilings and floors, conducing to ease and thoroughness in sweeping and cleansing. In outer walls, in doorways, similar curves reduce liability to hurt and harm. . . . Factory chimneys have long been built round instead of square: to-day in the best designs the ducts to a chimney are also freely curved. In blast furnaces this is the rule for every part of the structure, ensuring gain in strength, lessening resistance to the flow of gases, and thus saving much fuel. When water pipes varying in diameter are joined, the junction should be a gradual curve, otherwise retarding eddies will arise, wasting a good deal of energy. . . . All the various parts of heavy guns are curved, since any sharpness of angle at a joint brings in a hazard of rupture under the tremendous strains of explosion. . . . A glance at a war ship discovers her varied use of curves in defence; to deflect shot and shell her plates are given bulging lines, her turrets are built in spherical contours, and her casemates are convex throughout. . . . There is a gain in building breakwaters with an easy curve. To give their masonry and timbers a perpendicular face would be to invite damage, whereas a flowing contour, like that of a shelving beach, slows down an advancing breaker and checks its shock. In rearing lighthouses to bear the brunt of ocean storms the outline of a breaker is repeated to the utmost degree feasible."[1]

Self-assimilated and inter-assimilated activities, both as carried on and as contemplated, arouse the esthetic sense. All move-

[1] *Inventors at Work*, pp. 49, 50, 51.

ments produced rhythmically, and therefore with the minimum of difficulty, the maximum of ease, have the quality of beauty; where movements show unlike duration and interval a maximum instead of a minimum of effort is required, and we call them stiff, awkward, ungainly, ungraceful. Not only do assimilated movements avoid the waste of effort involved by unassimilated activities—a waste due to separate mental determinations, as well as to separate neuro-muscular adjustments: they economize the effort put forth in contemplation, since like elements that recur spare the need of changing adaptations to its object by the mind. Note the exercise of dancing, where many of the movements take place along curved lines, and in which the figures, could they be fixed, would often suggest the symmetries of design. "The beauty of curved motion," says Wölfflein, "is perhaps never more effectively shown than in the majestic flight of birds of prey." Darwin, in *The Voyage of a Naturalist,* tells us that "when condors are wheeling in a flock round and round any spot their flight is beautiful." Most of us have taken a degree of pleasure in the spinning motions of the top, with its graceful secondary curves; in the gyroscope, which rotates as well as spins; even in the revolutions of the otherwise prosaic flywheel.

There is a noticeable qualification without any essential difference in the pleasure excited by natural scenery. We cannot say that the features of a landscape are spread out before us with the simple regularity of an artificially devised pattern. They are in groups: the objects they include may suggest multifarious ideas. Yet much of the difference observed proceeds from complexity. There are meanwhile countless iterated elements within the irregularity. A rude unity of impression arises even from the ensemble. The fact that the admiration of natural scenery is a late acquirement in the history of the race must not delude us into the supposition that because early literatures are lacking in descriptions of nature our modern sentiment towards it has no relation to the likening process. In primitive stages of human development the mind finds satisfaction for its esthetic sense only in the most simple resemblances, as these occur in the parallels, zigzags or iterated dots which we find in the art of savages—in the repeated beat of the barbaric tom-tom, or in the recurrent

notes, without melody, of early music. As to primitive peoples our modern musical compositions would present only a confused jumble of irregularities, worthy of ridicule rather than admiration, so to ancient man the landscape, contemplated in the large, must have suggested chaos rather than order, and could not have been esthetically intelligible. It is possibly because of advance in the power to recognize similarities beneath variety, fundamental likenesses in and through superficial differences, that the modern mind is able to take pleasure in those complexes of the regular and uniform within the irregular which make up what we call the beautiful in nature. Otherwise it would be difficult to account for that subtle fascination which, drawing men to forest and sea, to mountain and river, makes real the poet's fancy of,

> A distant dearness in the hill,
> A secret sweetness in the stream.

For within and beneath all the objective multiplicity and complexity of the landscape there are rich iterations, harmonious repetitions, large symmetries that, appealing to all the senses at once, endlessly emphasize and recruit each other—the rustling of millions of leaves supplemented by their like forms endlessly prolonged; the rhythmic murmur of stream or sea, mingling with the repetitions of sound; the iterations of contour which simultaneously reach the eye; the regular undulations of a 'rolling' landscape, or the divisions man has contrived in it; the wide areas of growing grain whose slender stalks flow in wind-chased waves, or the long meadows dotted with daisies; the crenelated zig-zags of distant mountains, cutting their iterated patterns into the fringe of overhanging clouds; then, between earth and sky, thus filled with impressions for the eye, the rhythmic hum of insects, the slower pulses in the notes of birds.

The beauty of the organized rhythm which we call music—simple as a product of the human voice, more complex when the sounds are given forth by instruments—is also largely a result of the complication of the law of assimilation with the law of consciousness. Melody is undoubtedly indispensable to music, yet music begins in the simplest regular-interval sounds; melody —variation in pitch and time—is added to relieve the monotony

of the one-note, equal-spaced sounds, account being taken of the fact that the same impression continually iterated finally ceases to be noticed; it is therefore a contrivance for refreshing the consciousness with the shock of sensations continually varied. Melody, being superadded, is thus the superficial aspect of music, while rhythm is its permanent element, its fundamental factor, founded on that law of the inorganic which makes repetition, iteration, likeness, the direction of least resistance. Whence it follows that melody could be eliminated from music without disturbing its fundamental character. None the less are the most pleasurable effects of musical sounds due to that mingling of the superficially unlike with the fundamentally like which enables the mind to recognize uniformity beneath variety and symmetry within difference.

It may be said that there is something absolute in music, something unrelated to the conditions of time and space. How much? The quality of the musical sensation, like that of the visual sensation, has an apparently unrelated element, and is to that extent *unergründlich*. We cannot say why ether vibrations should yield the sensation of red or blue; all we know is that, given the interplay between the ether and the organism, such and such sensations do actually result. The matter of importance is not the special character of these subjective products, which must vary for different types of organisms, but rather their character as likenesses and differences. None of the notes, melodies, compositions we hear have any label of language which joins them indissolubly to particular concepts, ideas or trains of thought; yet this very nature of theirs, as unchained from the trammels of speech, sets feeling and thought free to weave what they will from personal mood and individual experience. As the very vagueness of the suggestion lends itself to the recovery of subtle resemblances unattainable through the medium of bound words, so the indefinite amplitude and massive sweep of the conscious states aroused by music more than make up for any lack of intensity in the momentary impression. And though the same sounds, the same melody, may have unlike suggestions for different individuals, there is for each of them a collocation of sound and feeling that endures. Deeper, moreover, than any personal linking of

musical sounds with individual experience is that subtle recovery of race associations which is common to all. Long centuries of contact with nature have impressed upon us classes of sensations which resound more or less clearly, more or less remotely, at the touch of music. The rustle of the forest, the pattering of rain, the glint of sunshine on lake or sea, torrent-traversed valleys or mountains wreathed in mist, the cloud sailing through deep blue across the moon, morning star and western night glow, calm of summer landscape and riot of winter storm—all find their distant reverberation in the feelings aroused by musical sounds. Given the rapidly changing shocks required for vivid consciousness—given, therefore, the superficial differences from which they come—then even our unbound and speechless music must be viewed as a vast system of meaning-laden repetitions which, vaguely organized into recoverable classes, their differences dominated by likenesses, captivate the fancy and overwhelm the imagination as they unify man with nature and make life and feeling one.

The manner in which the rhythm of musical sound and of human speech echo the rhythms of nature and of art is especially instructive. We hear continually in metaphor of "waves of sound," "rippling tones," "pattering melodies." Weismann[1] writes of "the mighty ocean of music," of "the swell of the waves of music which surged along," and of the parts of a polyphonic composition as constituting "the most charming musical architecture." Similar analogies have been recognized between oratory and nature phenomena in descriptions of the former, yielding such phrases as "A combination of cloud, whirlwind and flame;" "The orator rushes upon you in full flood;" "Deep and melodious cadences, as waves upon the shore of a far-resounding sea;" "Every sentence came rolling like a wave of the Atlantic three thousand miles long;" "He loved such far-sounding words as would suggest the long roll of the wave thundering on the shore;" "He was like a billow of the ocean on the first bright day after the storm, dashing against the rocky cliff and then, sparkling with light, retreating to its home." "It is to the

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[1] *The Musical Sense.*

sea rather than to fire," says Frank Byron Jevons,[1] "that Sappho should be likened, for although her verses are indeed, as the ancient critics remarked, mixed with fire, and her passion blazes out, now here, now there, and glows always, her verses and her passion are oceanic in their depth and tidal in their strength." "To express the quality of Sappho's verse we must borrow a comparison from Sappho herself: it is 'more delicate than waters which make a pleasant noise'—

> "A noise like of a hidden brook
> In the leafy month of June,
> That to the sleepy woods all night
> Singeth a quiet tune."

That the iterations which thus affect us do not belong to the realm of human artifice, but originate in the deepest activities of nature, may be seen in that poetic thought of the world which expresses the esthetic feeling in its highest flight. The brook is likened to "chatter and babble"; the rivulet "ripples on in light and shade" to the maiden's ballad; for Geibel the forest is "green-tongued" ("der Wald mit seinen grünen Zungen"). In Schäfer's verse the rustle of the leaves and the chatter of the stream are made one; in Tennyson's lines the "myriad shriek of ocean-wheeling fowl" finds its analogue in the "moving whisper of huge trees," and the "league-long roller thundering on the reef." The clouds, in their cumulus, alto-cumulus and cirro-cumulus varieties, are "billowy-bosomed" (Browning), or resemble sheep reposing in a meadow; the waves, likened by the ancient Egyptians to dragons, have been compared by Mörike to "horses of the gods" ("Rösse der Götter"), while Kipling intensifies their multitudinous aspect with a metaphor from the chase:

> The sight of salt water unbounded—
> The heave and the halt and the hurl and the crash of the comber wind-hounded.

So for innumerable poets the constellations look down on man through the same 'thousand eyes' with which Plato would fain have gazed upon his beloved; so all celestial objects have been

[1] *A History of Greek Literature*, p. 139.

conceived of as vocal, from the sun, which in the verse of Goethe,

> tönt nach alter Weise
> In Brüdersphären Wettgesang,

to the stars themselves, in whose song Shakespeare finds heavenly and human harmonies inextricably confounded:

> Look how the floor of heaven
> Is thick inlaid with patines of bright gold.
> There's not the smallest orb which thou behold'st
> But in his motion like an angel sings,
> Still quiring to the young-eyed cherubims:
> Such harmony is in immortal souls;
> But while this muddy vesture of decay
> Doth grossly close it in we cannot hear it.

The cosmic process, then, so far as we can be acquainted with it, culminates for feeling in the esthetic satisfactions, and these are adumbrated in the very nature of change as a movement from the direction of greatest stress towards the direction of least stress. It is of the nature of the universe as a dynamic system to maintain its equivalence of power, nor does that primordial necessity cease with the production of difference: prolonged into the realm of matter, it takes effect in all collocations and rearrangements thereof. Hence on the elementary, pre-vital plane, the 'conservation of energy'; hence also on the higher plane the conservation which we call life. The simpler form of maintenance shows itself in the endurance which is inorganic; later come organisms which, owing to the necessity of death, reproduce their likes and interact assimilatively in and for association. So also in the case of conscious states: knowledge is primarily the gathering of sense perceptions into classes of likes by a process which is strictly analogous with that by which like objects are themselves brought together into classes or interassimilated for association. Feeling, as we have seen, depends on difference, and esthetic pleasure arises out of likeness complicated with but dominating difference. There is a beginning of this pleasure in cognition itself—in perceiving that objects separated in space, despite superficial differences, are fundamentally like each other; it is more or less distinctly felt in the case of things re-seen or old experiences renewed; it takes more intense form

in the creative production of likes, as in the artistic imitations of sculpture, painting, the drama and literature: as the statue is a mimicry of the human form, so are the play and the novel mimicries of human life, much of the pleasure we experience in viewing the one, in reading the other, coming from the recognition of likeness. Man loves to fashion the environment after himself: his deities are mainly beings in his own image, and though the anthropomorphism is gradually refined, first emphasizing characters of shape, later characters of will, consciousness and intelligence, the process remains on its formal side a mimicry of the human self. Nor is this play of the likening process in religion invalidated by the fact that, anthropomorphism apart, we are rationally entitled to find in the universe the fundamental characters of our own being, and of these supremely the teleological character, since without it as sourced in the cosmos an organism could not arise.

Uniformities of time and space, equally spaced iterations and repetitions, self-assimilated curves and movements, symmetries of natural growth that reappear in artificial patterns, all arise out of the working of the universe towards conditions of least stress, out of its moulding of material units into collocations that secure conditions of utmost harmony and maximum endurance, and may therefore be regarded as ways or modes by which the cosmic function of self-maintenance takes effect in the realm of matter. So the movement in life and mind towards likeness, effective as segregation, operative as assimilation, or resulting from voluntary imitation, with or without esthetic pleasure, is one with the nature movement away from directions of greatest towards directions of least stress. The esthetic satisfactions are an outcome of the self-maintaining satisfactions, and are related directly through consciousness to the functional activities of both organism and universe. Our enjoyment of music, in which these satisfactions culminate, may be regarded as an enjoyment of that which most completely imitates the universe process itself—of differences buttressed in likeness, of wholes dominating parts, of unity making itself felt through variety, of order emerging from chaos, of the mechanical pervaded by the purposive. If the cosmos were an organism it would take pleasure in the conversion

of differences into likenesses, of change into endurance, of chaotic into harmonious forms; if it were conscious, it would find in the setting up of a star cluster, in the building of a solar system, in the synthesis of a crystal and in the construction of the beautiful organic adaptations seen everywhere in nature, an enjoyment analogous to that which man has in beholding them.

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REVIEWS OF BOOKS.

Space, Time and Deity. The Gifford Lectures at Glasgow, 1916–1918, by S. ALEXANDER. Two volumes. MacMillan & Co., London, 1920. —pp. xvi, 347; xiii, 437.

Dr. Alexander has made an important contribution to systematic philosophy. His work is an original, thorough and massive discussion of nearly all the main problems of metaphysics. It is, in my judgment, the most significant recent attempt to formulate a realistic system of metaphysics. Taken along with the recent publications of Dr. Whitehead and Dr. Bosanquet, it furnishes impressive testimony to the continued vigor of British philosophical speculation.

It is extremely difficult to convey a fair idea of the contents and purport of so comprehensive a work as *Space, Time and Deity,* without extending the account to inordinate length or writing a series of articles. I shall follow Dr. Alexander's own order of treatment, limiting myself to brief summaries of his most significant positions, with a few comments thereon.

The work is divided into four books, dealing respectively with—*Space-Time,* the *Categories,* the *Order and Problems of Empirical Existence* and *Deity.* In an introduction Dr. Alexander states his conception of the scope and method of metaphysics or philosophy, and outlines his own attitude and mode of procedure. Philosophy, for him, is "the experimental or empirical study of the non-empirical or *a priori,* and of such questions as arise out of the relation of the empirical to the *a priori*" (Vol. I, p. 4); "The subject matter of epistemology is nothing but a chapter, though an important one, in the wider science of metaphysics, and not its indispensable foundation" (p. 7). Dr. Alexander expresses his deep obligations to Messrs. Bradley and Bosanquet. Like the members of the school of which these two are the leaders, Dr. Alexander accepts coherence as the test of truth and rejects the doctrine of the externality of relations. As for them, so for him, reality is one Whole. He parts company with absolute idealism in rejecting the privileged position of mind in the universe, and the absolute idealist's assertion "that the parts of the world are not ultimately real or *true,* but only the whole is *true*" (p. 8). Dr. Alexander says that his inquiry is realistic, in the sense

that he does not start with the assumption that mind is the measure of things as does the idealist. "But," he adds, "no sane philosophy has ever been exclusively the one or the other" (p. 8). He proposes in the present inquiry "to examine in their order the various categorial features of existence and to exhibit the relation of mind to its objects in its proper place in the system of finite empirical existences" (p. 10). But, by way of giving a clue to his standpoint, he states briefly at the outset his theory of the relation between mind and its objects. Mind consists of *acts*—acts in which it *contemplates its objects* and acts in which it *enjoys itself*. The mind cannot contemplate itself as object; introspection is enjoyment by the mind of itself; contemplation is always extrospection. The distinction between the acts of mind and the objects of mind is expressed in the two verbal endings *-ing* and *-ed*—for example, sensing, perceiving, enjoying; and sensed, perceived, enjoyed. Mind is a *continuum* and its objects are *continua*. There can be no mental acts without objects, and mind and its objects are *compresent* or together; but the cognitive relation of compresence, as a relation, contains nothing to distinguish it from the compresence between two objects such as tree and grass. The difference between the two cases is to be found "not in the nature of the relation, but of the terms related. In the case of two physical objects both terms are physical." In the case of cognition of a physical object, one of the terms is a mental or conscious being; so, instead of saying *on, beside,* or *above,* we have to say *of, conscious of*. "The little word *of* is the symbol of the compresence" (p. 27). Togetherness, then, is fundamental to all experience. Physical togetherness is a spacial and temporal relation. Mental acts are in temporal relation to one another and to their objects; the mind seems to be somewhere in space; furthermore, Space and Time are implied in all the categories such as causality or substance. Therefore the first duty of the metaphysician seems to be to investigate the nature of Space and Time.

In Book I, Space-Time, Dr. Alexander subjects to a very thorough and searching examination the problems of Physical Space-Time, Mental Space-Time, Mathematical Space-Time, and Relations in Space-Time. This inquiry occupies one hundred and forty-five pages of the first volume, and I shall have to summarize it briefly. Space and Time are not separate existences, but aspects of one whole—"Space-Time which is the primordial stuff or matrix out of which things and events are made, the medium in which they are precipitated and crystallized." All finite existents are complexes of

Space and Time (pp. 338, 342, etc.). Space and Time are intuited as infinite and continuous wholes of parts; the parts are point-instants or pure events (p. 48, etc.). (It would be interesting to compare Dr. Alexander's point-instants with the event-particles of Dr. Whitehead.) It is Time which gives distinction to the parts of Space; namely, it is the fact that different instants occupy the same point and different points occupy the same instant that enables us to distinguish the parts of space. On the other hand, it is space which gives continuity to the successive instants of time. "If Time were bare Time it would consist of perishing instants. Instead of a continuous Time, there would be nothing more than an instant, a now which was perpetually being renewed. But Time would then be for itself and for an observer a mere now, and would contain neither earlier or later" (p. 45). . . . "In order that Time should linger, Space must recur, a point must be repeated in more than one instant" (p. 49). Space is generated in or by Time. Space is the trail of Time. Time is the occupation of a stretch of space. Space-Time consists of lines of advance connected into a whole or system, a system of motions (p. 61). The history of the universe is a continuous redistribution of instants of time among points of space (p. 63). Total Space-Time is the synthesis of all partial perspectives of Space-Time (p. 76). "For a perspective of Space-Time is merely the whole of Space-Time as it is related to a point-instant by virtue of the lines of connection between it and other point-instants" (p. 77). ". . . position in space is occupied by only one time in a given time perspective, but by all time in the totality of perspectives" (p. 80). "In total Space-Time each point is, in fact, repeated through the whole of Time, and each instant over the whole of Space. Now when these particular selections are made of point-instants, the one from the total of one set of perspectives and the other from the other set, we have a total space which occurs at one instant and a total time which occupies one point. The total Space and Time so arrived at are what we call, in distinction from perspectives, sections of Space-Time. They do not represent what the world of Space-Time is historically, at any moment, or at any point. For at any moment of its real history Space is not all of one date and Time is not all at one point. But Space and Time so described can be got by an arbitrary selection from the infinite rearrangements of instants amongst points and the result of the selection is to give a Space apart from its Times and a Time apart from its places. That Space and that Time are what is meant by the definitions of them as assemblages, the one of all events of the same

date, the other of all events at the same place. Moreover, real Space with its varying dates coincides with this total Space when the variation of dates is omitted; and correspondingly for Time. Hence from considering the true perspectives of Space-Time we can arrive at the notion of Space occurring at one time, or time occupying one place. But from these sections we cannot arrive at the notion of true perspectives or of true Space-Time" (p. 81). Thus it is possible because Time is repeated in Space, and Space in Time, to speak of Time and Space as existing by themselves. Such language is the result of an arbitrary selection from the Space-Time whole. The common notions of an absolute Time and Space are thus the result of arbitrary selections by which is formed the conceptions of a Time which flows uniformly on and a Space immovable. These conceptions are false only if it is supposed that all Space occurs at one instant, or all Time at one point. In the total reality which is their combination, Space is always variously occupied by Time and Time is variously spread over Space. Thus Space and Time are relative to one another and rest is relative, but the total Space-Time is not relative since it is the stuff of the Universe. In a brief discussion of the new relativity theory in physics, Dr. Alexander suggests that the importance of the doctrine lies: (1) in the recognition of the truth that the world is physical, not geometrical, and that Space and Time are indissoluble; (2) in the exact determination of how formulae are to be transformed in the case where one system moves in uniform translation with respect to another system. He points out truly that the relativistic physicist can only avoid solipsism by assuming a common world in which we communicate, and that this world is the total Space-Time world.

The most important points in Dr. Alexander's treatment of mental Space-Time seem to me to be the following: a memory-object is a physical object just as truly as is a present or perceived object; a memory is not a present object; remembering is a retrospective desire; the past is experienced as past; since time is real the past is not a mere invention of the mind. Similarly, Dr. Alexander holds that a remembered emotion is not a present emotion and that, when a remembered state of mind is declared to be a state of feeling, we are making a psychological mistake (pp. 114–133). Taken baldly, these statements sound paradoxical; but what Dr. Alexander means by the existence of the past in memory seems to be the real existence of the neural counterparts of memories. Psychically we enjoy the past since enjoyment is the immediate counterpart always of a neural

process. He concludes by showing that mental Space and Time are indissoluble like physical space and time.

In his chapters on mathematical space and time, and relations in space and time, I think he is successful in showing that mathematics deals indirectly with empirical Space-Time. Thus his general conclusion is that in the end physical space and time, extension and duration, and mental space and time are one; and that space and time are the same reality considered under different aspects. One might demur (as I would) to his doctrine that Space-Time is the one all-inclusive living stuff or body-soul of reality, and accept his conclusion with regard to the interdependence of space and time and the impossibility of ultimately sundering physical, mathematical and mental Space-Time.

Book II, the Categories, is a very thorough and stimulating discussion of this subject. The topics are as follows: Nature of the Categories; Identity, Diversity, and Existence; Universal, Particular, and Individual; Relation; Order; Substance, Causality, Reciprocity; Quantity and Intensity; Whole and Part, and Number; Motion, and the Categories in General; the One and the Many. The categories of experience are the pervasive or "prerogative characters of things which run through all the rest as the warp on which the others are woven" (p. 186). They are the ground-work of all empirical reality and are common to mind and non-mental things. Compared with them the Platonic forms of sensible things are empirical. The categories are "fundamental determinations of Space-Time itself, not taken as a whole, but in every portion of it" (p. 189). "The categories are, as it were, begotten by Time on Space." Carrying out his method consistently, Dr. Alexander finds every category in the empirical Space-Time order. Universality, for example, is a determination of Space-Time, since empirical universals or kinds are plans of configurations of particulars which are identical in kind. Universality is the category in virtue of which there are universals. "Universality is thus the name of the constancy of any existent in Space-Time, so far as it is constant, that is, its freedom from distortion whenever it is in Space-Time, and this is equivalent to the uniformity of space" (p. 215). The universals are non-mental; they subsist; they exist only so far as they are realized in their particulars. As such, a physical universal is a physical subsistent, and a mental one a mental subsistent (p. 223). Universals are not lifeless; "they are the plans of motion and action, to which all action conforms" (p. 225). Dr. Alexander makes a very suggestive remark in regard to the uni-

versals of Plato. He says it was a tendency of the age of Plato to seek the highest ideals of perfection in statuesque repose rather than in restless motion, and that is why Plato conceived his universals as changeless, immovable, and eternal. The universals, Dr. Alexander says, are instinct with time since they are spacio-temporal plans or laws of construction. On Mr. Bosanquet's 'concrete universal,' he remarks that it is not a universal, but a universe and it mistakes universality for system. The treatment of Relations is very important. A relation is a transaction between its terms. It may be described as the whole situation into which its terms enter in virtue of that relation. Therefore, the relation is just as concrete as the terms and just as much a reality and belongs to the same tissue with them.

Relation, in Platonic language, communicates with other categories such as universality, causality, etc. Relations are not external to their terms and are in no sense subjective or the work of the mind. There are three kinds of relations: the strictly categorical, the essential, and the extrinsic. The categorial and the essential are both intrinsic, and these are relatively unalterable; for example, a man remains a man though he becomes a king, or a father or a slave; but extrinsic relations may alter a man's character; he may become brutalized or soured. Extrinsic relations may affect the typical character; for example, intoxication. Dr. Alexander disposes of Dr. Bradley's showing up of the contradictions of space and time as due to the endless regress of relations, by the argument that the latter has taken the fictitious or abstract space and time and has demonstrated their abstractness. The truth is that the relations and the terms are of the same stuff, and time is spacial and space temporal.

"Order is a category of things because of betweenness of position in Space-Time" (p. 262). Although it may be expressed in terms of relation, order is not a mere combination of relations since betweenness is primordial to all relations. Order communicates with existence and universality; but it is not the same as universality, since order is the collective name of all the positions in ordered series, not the universal of the positions. Substance Dr. Alexander defines as individual identity persisting through a duration of time. Point-instants, the limiting forms of movements in space-time, are momentary substances. Wherever we have the repetition of a plan, that is, the existence of a particularized universal or individual through a period of time, we have substantial identity. "In all cases it is the spacial contour which provides the unity of substance" (p.

273). Dr. Alexander concludes that sensory qualities do not interpenetrate. "Thus a substance in respect of its qualities may be described as a space of a certain contour stippled over with qualities. . . . Ultimately the substantiality of it is its defined volume of space time" (p. 276). Causality is "the relation of continuity between one substance and another, whether those substances be things or merely motions which we are not in a habit of calling things (*e.g.*, light). The causal relation is the obverse side of the existence of substance" (p. 281). The distinction between transeunt and immanent causality is always relative to a point of view. The only complete self-causality is that of the universe as a whole, since within the universe every existent is in causal relation with other existents. Cause and effect are different and cause is always prior to effect. There is no necessity in the causal relation except fact. Every fact carries with it the necessity for the human mind of accepting it. Nor does the category of causality imply power or force. Dr. Alexander rejects logical atomism since he holds that concepts are objective. He also rejects the idealistic reduction of causation to rational ground and consequent. This reduction is an attempt to translate what is essentially temporal into something stationary (pp. 295–297). Quantity: "Extensive quantity belongs to existents so far as the space and time of their Space-Time vary together; they have intensive quantity so far as one or other remaining constant the other varies" (p. 307). Number: "Being a plan of constitution of a whole of parts, number is universal . . . arising out of Space-Time as such" (p. 314). . . . "numbers are empirical universals in the same way as triangle and sphere and dog are empirical universals" (p. 315). Motion is more complex than all the other categories; it includes them and communicates with them all; Space and Time are equivalent to motion. The other categories do not communicate with motion, since it is presupposed in them all. "Even substance is not in itself motion, though every *thing* besides being substance is motion. Substance represents motion only in respect of its persistent occupation of space through a lapse of time; . . . in motion the full tale of the fundamental determinations of Space-Time is told and motion is consequently the totality of what can be affirmed of every space time" (p. 323).

"The categories enter into mind as they enter into the constitution of everything else" (p. 330). "All things come into being endowed with the categories and with all of them. They are the determinations of all things which arise within Space-Time, which is the

matrix of things, 'the nurse of becoming'" (p. 331). "Space-Time itself and all its features are revealed to us direct as red or sweet are" (p. 336). "Space-Time . . . does not exist but it is existence itself, taken in the whole." "Space-Time is not universal; . . . were it universal it must be repeated or at least capable of repetition. But how should the whole of Space-Time be repeated? For if it could be, it would not be the whole" (p. 338). It is not a whole of parts nor a one of many; it is *the* one. "Infinite Space-Time is not the substance of substances, but it is the stuff of substances." "It is itself the whole of spaces and times, as it is all existence, and all substance. All its characters are reflected in its children. Call it by what name you will, universe or God or the One, it is not above Space or Time." The only eternity which can be construed in terms of experience is infinite Time (pp. 341–343). Whether things be brief as the lightning or long as the solar system, whether things disappear or be transformed, whether things perish or grow, whether they be crude as a lump of dirt or perfect as the *Divine Comedy*, they are real as configurations within the one matrix, Space-Time, which is the Absolute. Thus ends the first volume of *Space, Time and Deity*. It is original, packed with thought, informing and stimulating. To attempt to give, as I have perforce attempted, in short space, the main outlines of the doctrine, is like attempting to boil down the *Critique of Pure Reason*, or Hegel's *Science of Logic* into a few pages. The test of a metaphysics is its doctrine of the categories. Dr. Alexander's work meets the test. Whatever one may think of his Absolute, Space-Time, one cannot forego bearing testimony to the thoroughness and consistency with which the doctrine is worked out.

Volume II consists of applications of the fundamental doctrine to the Problems of Empirical Existence. I shall single out for discussion his theories of Mind, Cognition, Value and Deity. Empirical existence consists of a series or hierarchy of levels of empirical qualities. Each level is built up by a selection and complication from the processes of the next lower level. Each level, in turn, becomes the basis for the formation, by selection and complication, of the next higher empirical qualities. The new level may be called the 'soul' of the 'body' which is formed from the qualities of the next lower level. Dr. Alexander calls the 'soul' an 'emergent' from the 'body.' "The soul of each level is the soul of a body which is the stuff of which it may be called the form" (p. 68). "Each new type of existent, when it emerges, is expressible completely or without residue in terms of the lower stage, and therefore indirectly in terms of all

lower stages; mind in terms of living process, life in terms of physico-chemical process, sense-quality, like colour, in terms of matter with its movements, matter itself in terms of motion. . . . There is a body or material of the lower level, of which one part is so complicated as to be endowed, in fact, with a new quality, which performs to it the office of soul or mind and may be called with proper caution, its mind; body and mind being identical in this portion of the body in question. Life, we have seen, is a selection from a larger whole of physico-chemical processes. A secondary quality like colour, belongs to one part or grouping of primary qualities in the material body to which it belongs, other parts of which may be occupied by other secondary qualities, and others by mere matter without secondary qualities; according to the conception reached at an earlier stage that a thing or substance was a volume of space-time occupied in diverse parts so as to fill its contour by qualities" (pp. 67-68). Thus Life is intermediate between Matter and Mind. Life is not an epiphenomenon of matter but an emergent from it. The directing agency, in the case of Life and Mind, is not a separate existence but is found in the principle or plan of the constellation which is its body (p. 64). When a new empirical complex emerges from a spacial configuration of lower qualities, it is no longer purely material. Mind is the last empirical quality of finite complexes that we know. If mechanism means the assertion that the Life-complex is nothing but physico-chemical process, Dr. Alexander rejects it on the ground that, empirically, the new complex is no longer purely material, although it is material. For the emergent qualities are as empirically real as anything can be. Similarly, of course, with a Mind-complex. The 'Minds' of the various empirical levels differ in kinds. The higher emergent is "based on a complexity of the lower existents; thus life is a complex of material bodies and mind of living ones. Ascent takes place, it would seem, through complexity. But at each change of quality the complexity, as it were, gathers itself together and is expressed in a new simplicity. The emergent quality is the summing together into a new totality of the component materials. Just in this way, as our thoughts become more and more complex, some new conception arises in the mind of a discoverer which brings order into the immense tangle of facts and simplifies them and becomes the starting point for fresh advances in knowledge. . . . Somewhat in this fashion complexes of one stage of existence gather themselves for a new creation, and additional complexities mean new simplifications" (p. 70). Thus Life is not colored but it involves color. Energy does

not belong to Mind or Life, but it does belong to the material basis of these. Life and Mind are extended and in Time (p. 71). Everything is a complex of Space-Time. "Thus the same thing which as contemplated, is a living thing, enjoys itself in its distinctive quality of mind, and enjoys its mind under all the categories" (p. 71). "A calculator, given the state of the universe, at a certain number of instants, or at one instant with the law of its change could, given sufficient powers, calculate what the spacio-temporal condition of the world would be at any given later instant. But he could not . . . predict what qualities would be evoked by the complexes he predicts in Space-Time, unless he lived to observe them" (p. 73).

Mind is enjoyed innervation; mind is identical with those complex neural processes from which consciousness emerges. Mind is active or attentive and selective. It is not an epiphenomenon, because it is the enjoyment of the neural process which is mental, and not of any other neural process. Dr. Alexander rejects both parallelism and animism. Mind and brain interact in the sense that neuro-conscious processes produce other neuro-conscious processes. ". . . Consciousness is, in fact, the enjoyed innervation of the appropriate neural process. It is the enjoyed beginning of a process which terminates in somatic changes" (p. 107). Referring to Mr. Holt's doctrine of consciousness, Dr. Alexander says that consciousness is the search light which selects and illuminates that cross section of the environment *of* which it is conscious. Mind consists of acts or conations; all cognitions are conations considered in their objective references (p. 121). "Speculative conation or cognition is isolated from practical conation by diversion or suspension of the practical movements which alter the world. We learn to alter ourselves and leave the object alone" (p. 120). "Feelings are objective experiences *of the order of* organic sensa" (p. 124). Summarily, "the processes of which mind consists are the highly complex movements carrying the quality of consciousness which are described as conations" (p. 125).

Theory of Knowledge.—The elements involved in Dr. Alexander's theory of knowledge are, Things, Objects, Sensa, Appearances, and Mental or Selective Acts. The things which the mind contemplates are contemplated selectively as partial objects. The thing is revealed in its objects. There is no thing which lives, as it were, behind its object, which reveals it. Sensa, or sensory appearances, are of the same kinds of existence as the objects themselves. All that objects of mind owe to mind is their selection, their *esse* they have as finite existences in Space-Time. Sensa and images, even in the

case of illusions and hallucinations, are non-mental. For example, "The image of a tree is no more examined by introspection than the perceived tree. Both are objects of extrospection." (p. 90). The things which the mind contemplates are contemplated selectively as partial objects (p. 91). Consequently: "The partial revelation of a thing to mind in the form of objects which belong to the thing merely means in the end that no object, nor even a thing, is given alone, but, because it is a part of Space-Time, coheres in varying degrees of closeness with other objects and groups of such objects connected together by the categorial relation of substance, that is, belonging to the same volume of space-time. The thing which is partially revealed in its objects, whether of sense or memory or thinking or imagination, is thus of the same kind of existence as the objects themselves" (Vol. II, p. 94).

Mind, in virtue of its position in Space-Time, is affected by only a portion of the real characters revealed to it, for example, varying hotnesses; or because of the condition of the organism, the real thing is apprehended only in part, for example, water as hot, cold or lukewarm. All appearances are non-mental. A thing is a portion of space-time with a specific configuration of motion. The thing is discovered by the mind as the synthesis of its various appearances. Dr. Alexander distinguishes three kinds of appearances: (1) The *real* appearances of the thing are its appearances to standardized or normal minds. These, of course, have a variety of appearances and usually call the real thing what it appears to them to be when it is near enough to be touched, but reality, in this special sense, is a social convention or matter of social valuation; (2) *Mere* appearances are the appearances which arise from a combination of a thing with other things; for example, when we see things in an artificial light or blue haze; (3) *Illusory* appearances; for example, color contrasts or the plane picture of a box seen solid; these are due to the intrusion of the mind of the observer. "Illusory appearances always imply omission or addition or distortion owing to the abnormality of the percipient" (p. 185). In terms of practical value touch gives us standard sizes, shapes, etc. "Now, the superiority of touch over sight, in general, is due to the nature of its object which does not need, like color, a medium, but is conveyed to the body direct" (p. 204). "Now the price we pay for having our intuitions of Space aroused through sense, is that they are subject to whatever variations may be necessary for the proper business of vision" (p. 202).

All "perspectives" (in Mr. B. Russell's sense) are selections of

the thing presented to sight. The real thing is the totality of its perspectives (p. 196). Illusions "are perspectives of the real world as seen by a mind in abnormal condition" (p. 216). Illusions are not created by the mind. "What the mind does is to choose them from the world of reality. They also are an instance of the mind's selectiveness, only the selection is uncontrolled by that part of reality which purports to be perceived. The illusory object is as much non-mental as the real appearance" (p. 214). In an illusion: "We combine elements not really combined, but both the elements and their form of combination are features of the real world when that world is taken large enough. Sometimes the dislocation involved is more thoroughgoing still. In a rational dream I have not only appearances, but things which behave in the dream space precisely as they would in reality. They obey physical laws and are thus physical, though apprehended only in idea. . . . Everything in the dream is real. . . . But in the larger world they are not found in these arrangements and thus they cannot bear the test of the wider reference. . . . I do not make the green which I see in the illusory sensation or hallucination" (p. 215). Hallucination is an inverted illusion; in it the mind supplies the thing of which the interpretation is sensed, whereas in illusion the thing revealed is supplemented by an idea which does not fit it in fact (p. 211).

Intersubjective intercourse depersonalizes experience. So-called private experience is but each man's individual perspective of the thing (p. 229). Thus private spaces are but public spaces as observed by individuals at different points of view. Real space is their synthesis. The really important distinction is not between private and public experience but between personal and impersonal experience. Sensa and images are not private but public, except in so far as they contain illusory features. What is personal in the strictest sense is the act of enjoyment.

I shall deal briefly with Dr. Alexander's treatment of value. "Values," he says, "then are unlike the empirical qualities of external things, shape, or fragrance, or life; they imply the amalgamation of the object with the human appreciation of it. Truth does not consist of mere propositions but of propositions as believed; beauty is felt; and good is the satisfaction of persons. . . . The tertiary qualities . . .are subject-object determinations" (p. 238). Appreciations arise from the community of minds in social intercourse; they involve relations of the collective mind, by which he means a symbol for that coöperation and conflict of many minds which pro-

duced standards of approval or disapproval. The mind which appreciates value is a standard mind. What we apprehend in objects of value is their coherence. Values are real, for the mind is the highest finite empirical reality we know. The combination of two realities—mind and its objects—does not produce unreality. Truth is coherence in beliefs, as determined by reality. This does not mean that there never can be real opposition between propositions that are both true. Coherence is not a property of reality but of the perspectives which we have ourselves selected. The mind which has truth has it as a standard mind. Truth means the settling down of individual believings into a social whole. The mind which has error is so far an outcast from the intellectual community (p. 258). Were all minds perfect mirrors of reality, there would be no truth, for there would be no error (p. 259). Truth and error are as much social products as moral good and evil. A really solitary individual could not be aware of error. But the reality which is truly known is still only a human selection from the whole. The only propositions which are true and cannot change are those which embody categorial characters. "Goodness, then, like truth, is an amalgam of mental and non-mental existents; is a new reality whose internal coherence is its goodness" (p. 280). The good is a system of satisfaction of persons which is effected by right willing. The beauty of a beautiful object lies in the coherence of its parts; in a coherence which can be felt coherently by several minds. Goodness is inclusive; it belongs to all normal minds; beauty is a part of the good; goodness and truth are species of the beautiful; and all values are included in truth. In the coherence of the individual mind with itself and with other minds we find the true locus of all values; and their reality is the reality of mind.

The highest level of empirical existence known to us is finite mind. But we have every right to suppose that there are higher empirical qualities, and Deity is the next higher empirical quality than mind. God is the whole world as possessing the quality of Deity. Actually, God is the infinite world with its nisus towards Deity. God must include mind, since every empirical quality includes the lower qualities, but God must be more or higher than mind or spirit. Mind we may say, is His Body, but not his Deity. Thus God is the superior finite which has mind for its immediate body (p. 355). The body of the infinite God is the whole universe (p. 357). Our minds are organic sensa of God. The infinite God is purely ideal, since the attainment of Deity makes Deity finite. As actual, God does not

possess Deity but is the universe's tendency to that quality. We may say that God is the ideal God in embryo, always becoming Deity but never attaining it (p. 365). Thus there is a creative stream of tendency which makes for the realization of higher values—that is, of more complex empirical qualities. Our values are the proximate materials for the making of Deity (p. 416). But Deity is a quality, not a value, since values are secured by finite beings. Dr. Alexander thinks that the nisus or striving towards Deity, of the universe, is the true meaning of the God of the religious consciousness.

This is not the place to discuss fully the rich contents of Dr. Alexander's work. I will indicate briefly my difficulties, in the expectation of discussing more fully, on a later occasion, some of the fundamental issues involved in Dr. Alexander's challenge to other forms of speculative philosophy. (1) Dr. Alexander's Space-Time or Motion-Stuff reminds one of Aristotle; but Dr. Alexander has neither an Unmoved Mover nor entelechies. It reminds one of Bergson's Pure Duration; but, whereas in Bergson duration is explicitly Soul of which Body or Space is a by-product, for Alexander spacial extension is just as essential an aspect of reality as motion. In a Spinozistic sense Space and Time might be called attributes of the one Substance. I confess that Space-Time seems to me too thin, too abstract, too tenuous and mechanical, to be called the One Reality. There is motion, but there is nothing which moves or is moved. Dr. Alexander sets out from an abstract mathematico-physical concept of Space-Time, and then tells us that more concrete, or thicker and 'higher,' empirical orders 'emerge' from, or, rather, *in* the bosom of, the initial abstraction—*secondary qualities, living process, mind,* and we may believe, still *higher empirical qualities.* The magical word that does the trick, and saves the system from the appearance of being an abstract materialism is 'Emergence.' But what is 'emergence,' and how does it differ from a blind mechanico-mathematical causation? All the empirical riches that are to appear in the process are carefully hidden in this one word. It seems to me like saying—"Give me emergence and I will produce, each in its own good time, out of the Space-Time Hat, everything actual, and the promise of more to satisfy religious aspiration." Either each order of empirical qualities is produced blindly and mechanically from a lower order, and is *nothing but* the shifting of a mechanically predetermined spacio-temporal contour; or the higher qualities were already present potentially in the universe and then the higher qualities belong permanently to the essential constitution of reality, and reality is vastly

richer than Space-Time; then there is an eternal order of which the highest known qualities are the most adequate finite utterances. For the assumption that qualities not actual are potential is a logical evasion. Whatever emerges was somehow actual before its emergence, or else it was non-existent before it emerged and was caused, in the sense of being produced, by the lower complex from which it emerged.

(2) By what logical right does one speak of 'higher' and 'lower' empirical qualities, if Reality be essentially ever-moving spacio-temporal configurations? If there be creative advance or movement towards perfection, in the generation of empirical qualities, must not perfection, the goal, somehow exist or subsist through the whole process? If there be no fixed, no eternal standard, then we may be moving, indeed; but, inasmuch as we do not know and cannot know whether we are going anywhere, we have no right to speak of 'advance' or 'higher' and 'lower.' We are on the way to nowhere. Dr. Alexander has a working criterion of 'higher;' it is 'mind;' but mind is generated from life, life from matter and matter from Space-Time. In turn something higher than mind is being, or perhaps will be, or at least may be, generated from mind. But we are given no idea of what this 'higher' than mind is or will be, whenever it is or will be. Why not hold on to what we have and work it for all it is worth instead of dissolving it in a kinematical abstraction? (3) I cannot accept the validity of Dr. Alexander's explanation of the respective footings of *real, mere,* and *illusory,* appearances. In all cases, sizes, shapes, color-contrast, etc., the perceptual data depend on the interplay of percipient activity with a complex of external conditions. In all cases alike what is perceived or imaged depends, in varying degrees, on extra-organic and organic conditions plus the mental attitude of the percipient. Dr. Alexander is right in saying that the test of reality is social normality. The physically real is a social construct which presupposes community of structure in individual percipients and community of physical conditions. The world might be regarded as a collective hallucination, were it not that the subjectivist, like all other philosophers, quietly assumes a real community of persons in order to make his explanation work. Indeed he assumes this community in philosophizing at all. Dr. Alexander is on the right track in working towards a social realism. But, as a social realist, I would argue that it follows that the minimal concept of reality involves always a community of minds as its highest term and fullest meaning; and therefore, reality is not Space-Time but, at

least, a community of selves. The physical world is the frame-work of the community.

Dr. Alexander's book seems to me the most imposing and solid piece of metaphysical construction since Dr. Bosanquet's *Principle of Individuality and Value*. Dr. Alexander is strongest where, perhaps, Dr. Bosanquet is weakest—in physical cosmology. Dr. Bosanquet is strongest where Dr. Alexander is weakest—in the interpretation of the significance of the objective structures of historical and social culture, of mental or spiritual community and its works. The fundamental issue today in the logic of metaphysics is this—must metaphysicians, in obedience to the norms of kinematics or geometrizing physics, de-anthropomorphize the universe of experience to the extent of denying to the objective cultural activities of the human spirit, in society and its history, a key-position in reading the meaning of experience as a whole; or may they accord to "Cultural Reality" a central place? In spite of his temporal universe, Dr. Alexander pays scant attention to the metaphysical bearings of the historical cultural-life. In the large sense he is a naturalist. For him the categories of abstract physics are normative, notwithstanding the play he makes with emergence and conation. The above issue has always been the fundamental question in the logic of philosophy—what form of interpretation should philosophy aim at? But the issue is especially acute today in view of the tremendous impact of mechanics in education, industry and our entire social order, an impact greatly increased by the terrible destruction of the works of culture and the painful scission in its historical continuity wrought by the cataclysmic eruption of 1914–1918. I should be false to my own convictions if I omitted to say that the issue above stated has at stake the entire life of human culture; that philosophy is not primarily an intellectual exercise in cosmical kinematics, but is a serious call to interpret and to defend with all the power of reason, the vitality and supremacy of humanistic culture. From the standpoints alike of reflection upon the spiritual meaning of man's whole cultural experience, of the real nature and value of personality, and of the continuance and progress of civilization, I have to deny the normativeness of the categories of physics and of mechanism in all spheres, as being both grossly inadequate to the full implications or meaning of cultural experience and inimical to the spiritual welfare of civilization. To attempt to turn philosophy into a cosmical mathematics is to desert the ship. I see no worthy future for philosophy as such a discipline.

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The Ground and Goal of Human Life. By CHARLES GRAY SHAW. New York, The New York University Press, 1919.—pp. xii, 593.

This volume presents the elaborated material of a course in Ethics given in the Graduate School of New York University. The work is thoroughly representative of present tendencies in philosophy. It expresses the firm conviction that philosophy, if it is not to be shelved as an 'academic' interest, must have something positive to say about the situation in which humanity finds itself.

The problem to which the author addresses himself is that of the individual in the modern world, in his relations on the one side to nature and on the other to society. It may be stated in other terms as the problem of the subjective and the objective, the inner and the outer, as these factors present themselves to one seeking a philosophy of life. The work is an effort to discover what is unique in human life, as distinguished from other forms of existence, and to ask how these characteristic and significant elements can find expression in the objective order. What the author seeks, then, is "a treaty of peace between the forces of individualism" and those of "scientifico-social thought."

The volume is divided into three Books. Book One deals with the Ground of Life in Nature, which is treated in two parts, The Naturalization of Life, and The Struggle for Selfhood. Book Two, The Goal of Life in Society, is devoted in the first part to The Socialization of Life, and in the second to The Repudiation of Sociality. Book Three presents The Higher Synthesis in three main divisions: The Joy of Life in the World-Whole, The Worth of Life in the World-Whole, and The Truth of Life in the World-Whole.

Our age, we are told, is suffering from the submergence of the individual. Classicism sought to perfect the individual through the "substitution of the aesthetic and intellectual for the crude and barbaric." Christianity as a religion of redemption sought in turn the rescue of the individual from the world. Modern thought, on the contrary, has pursued the study of man and the world objectively "with a resolute disregard of the ultimate interests of his being." As a result we have become sure of the world but uncertain of ourselves. This naturalization of human life in the modern era was begun by astronomy and physics, and completed by biology and sociology. Positivism thus assumed "an air of finality": whatever additions might be made to a knowledge of facts, it was believed that no new principles of interpretation would be won. Against this naturalism, in-

dividualism contends that psychology should "undertake to exploit the individual, in order that the individual may find his place in the world and assert his position in the social order." We are in need of a Socrates to guide us to a higher truth.

Some explanation of terms employed by Professor Shaw is perhaps needed. "Scientism" and "sociality" are used to describe the prevailing modes of thought which have resulted from naturalism. "Scientism," unlike legitimate science, "attempts to deduce a life-ideal from the organized data peculiar to the inorganic and organic worlds" (p. 198). Science, as such, may perfect the principles of physics, chemistry, and biology "without any philosophical or poetical interference or criticism." Similarly, "sociality" is employed to designate the industrial and institutional order. It falsely regards these as adequate and authoritative interpretations of humanity. But humanity is, for Professor Shaw, a far richer term than society; it includes all the values and ideals revealed by individual experience.

The immediate protest against naturalism was offered by the æsthetic spirit, which has stood for the "joy of life." "If to be rational, the mind was called upon to be 'scientific,' the command of æstheticism was 'Be irrationalistic!' If, in order to be moral the will was expected to be 'social,' the exhortation of æstheticism was 'Be immoralistic'" (p. 67). The maxim, "Art for art's sake," with whatever abuses it has involved, has therefore to be charged to the account of naturalism. The revolt of aestheticism has been in essence a "eudæmonistic revolt." The justification of this emphasis upon æsthetic enjoyment is, we are told, that a man's joys are uniquely his own "because he has made them his own," whereas naturalism views them as the product of the physical order. Disinterested judgments of beauty rise "above the rank of mere occurrences," and so are "cleansed" of all immediate sensations and feelings. The extravagancies of the æsthetes, of whom Baudelaire is the type, are frankly acknowledged, but are justified by the necessity of asserting the claims of individualism. Even the morbid, it is said, may be valuable for this purpose by expressing "the unrecognized possibilities within the soul of man."

Immoralism and irreligion are also to be regarded as revolts against the submergence of the individual. Neitzsche linked together "self-development within" and "sin without." Semitic and Aryan tradition, it is pointed out, here unite. The story of Eve and the myth of Prometheus both make enlightenment depend upon disobedience. Dostoievsky is the great prophet of this view, but Emerson, earlier

even than the French Decadents and the Russian Nihilists, had given expression to a similar doctrine. A number of citations are given to establish the point, among them Emerson's familiar sayings that "it is an esoteric doctrine of society that a little wickedness is good to make muscle," and that "there is no man who is not at some time indebted to his vices, as no plant that is not fed on manures." "Irreligion," the author says, "strives to transcend religion for no other reason than that religion fails to assert the independence of the human self. That for which irreligion contends is the ideal which religion itself has not the courage to advance, the independence of the inner life" (p. 181). Religion has suffered, first because it has clung to an antiquated cosmology, holding "its picture of the phenomenal world dearer than its sense of inner life," and secondly, because it "has surrendered the spiritual to the social."

The argument of Book Two, which deals with the Socialization of Life and the Repudiation of Society, follows the same general lines as that of the first book. Individualism finds that human worth can not be construed in the spirit of "sociality." The social thinker has made the conception of society "commonplace and obnoxious." "According to naturalism," we are told, "the self does not exist; according to sociality the self has no right to think of existing." The protest of individualism against "sociality" has been made by decadence, pessimism, and scepticism.

One of the most vigorous sections of the book is devoted to the Socialization of Work. Mechanized industry is its typical expression. The life content of the individual is here "nothing but labor"; the higher spiritual goods have long since disappeared. It is the condemnation of industrialism that it has made man "an automaton who must wait upon his machine." The protest of socialism against the industrial order is not against "social production but non-social distribution"; and although socialism, at least with its more intelligent representatives, is not avowedly antagonistic to culture, it accepts the scientific socialization of life with a readiness that individualism is compelled to oppose. "When, therefore, socialism protests that the worker has no property, no tools, the individualist protests that the worker has no culture, no character" (p. 228). It may be added, I think, that capitalism has not put forward a higher standard of culture for the worker than has socialism. In these days, to be sure, capitalism has been insisting that the workers must at least have religion even though it has to be bought at a great price. But it needs no special acuteness to discover that religion in this connection does

not mean the deep and inward expansion of personal life, but rather an insurance against discontent, a nepenthe to drown the monotony and dullness of industrial life. In this sense religion, to quote an appeal in a recent religious campaign, "should pay dividends."

Morality, like other interests of life, has, we are told, suffered from the process of socialization. The "old duty" was imposed by the individual "who swung the yoke over his own shoulders"; the new "duty" has been placed upon the individual by society. Such a social morality lacks humanistic content. It results inevitably in an ideal of mediocrity, "the morals of the middle class," since to attain its universality, it can not be "pitched too high or too low." The antidote for the vicious nationalism and sociality of the last generation is found in the decadent individualists, who, if they have been "extreme and perverse," have at least maintained their independence.

It is not easy to do full justice in a brief statement to Professor Shaw's Higher Synthesis, which occupies more than two hundred pages of the text. Yet with his problem clearly in mind, it is possible to see at least the outlines of his solution. Individualism, for which he has so stoutly contended as a corrective of "scientism" and "sociality," and which was right "in a temporary and relative sense," cannot be the goal. Nor can this be found in "anti-naturalism or anti-social idealism," or in any view that would divorce the self from "the exterior orders of nature and humanity." Professor Shaw, however, contends that there must come a deepened and renewed "sense of inner life," and that it can perhaps be realized only by such a heightened personal consciousness as would "threaten our absurd ideals." "Our greatest need," he says, "at the present hour is a touch of solipsistic egoism." In keeping with this same temper of revolt he shows that the path of moral and spiritual progress may lead, as it has always led in the past, to the violation of social standards which have assumed a false absolutism.

More specifically, Professor Shaw's humanism is expanded in three directions, the æsthetic, the moral, and the intellectual. The æsthetic synthesis is concerned with The Joy of Life in the World-Whole. Now nature has not been exhausted by scientific method, which, however valid within its own field, proves helpless to interpret the world as a whole. A more "liberal and fluid" conception is possible, and in such an ideal of æsthetic interpretation the individualistic and the cosmic meet in "one synthesis." The æsthetic may thus overcome the opposition between the two values, and realize its "major possibilities as a form of human culture." Disinterested æsthetic appreciation not

only offers a substitute for vulgar pleasures, but provides a norm for the right judgment of legitimate pleasures, so that, as the author well says, one would "touch pleasure with the skill and lightness which is possible to him who has a consistent sense of the joy of life" (p. 408). The ethical discussion is concerned with the Worth of Life in the World-Whole, and asks how the "immoralistic pessimism" into which individualism has been forced may be overcome; how, in other words, the individual may find his true work in the world. One cannot idealize the present-day industrialism. Talk of the "dignity of labor" is but a "high-sounding phrase" which is always refuted by "the brutality and dullness" of the laboring class. And if there is "some joy attributable to human work," there is "a great deal more sorrow." The "unexpressed and perhaps unconscious logic of capitalism" reduces to a kind of "philosophical cruelty" to the effect that, "for weal or woe, the work of the world shall go on." In place, then, of work done from necessity, with its mechanical and joyless tasks, there must be substituted the ideal of intelligible and creative activity which shall give to the individual a sense of sharing "the august work which the world seems to be carrying on." The goal must also include knowledge as "the participation of intellectual life in the world." This statement is presented in opposition to traditional treatments of the problem of knowledge which have been dualistic after the manner of "thought and thing," "subject and object," "mind and matter." But intellectual life has gone on, the author says, "in delightful ignorance of the great decisions of the authoritarian epistemologists." As thought becomes more "liberal" and "versatile" the reunion of the self with the world may be effected. The old individualism which ignored the objective gives way to the new individualism which recognizes that the "subjective realizes itself in the objective." To such an individualism, knowledge, as participation in the world, is "the means to *the* end of life."

Professor Shaw's book, both in its historical and critical dicusssions, suggests a comparison with Professor Babbitt's *Rousseau and Romanticism*, which was noticed in an earlier issue of the REVIEW. To Professor Babbitt, Romanticism and all its works are an abomination, whereas to Professor Shaw it has been a useful and even necessary protest, however exaggerated and fantastic, against the forces of "scientism" and "sociality." Both writers agree in their opposition to naturalism, which they interpret in its lowest and most indefensible form. In his final synthesis, however, Professor Shaw indicates the possibility of a higher type of naturalism, as when he says: "The

concept nature is deep and rich enough to include both man and nature" (p. 576). Similarly, Professor Babbitt announces his own position as a "complete positivism," by which he means that man as well as nature is to be studied by the same careful and critical methods as have been applied to external nature. Such a view might with equal propriety be designated as a complete or higher naturalism. Each of these writers, too, announces himself as a humanist. But the individualism of Professor Shaw is far more pronounced. This difference appears sharply in their attitudes to classicism in one of its most characteristic features. Professor Babbitt's humanism exalts the Socratic method because it was able to furnish the key to what is typical and representative in human nature; and for him, the typical is the significant, furnishing, as it does, the norms and ideals for imitation. Professor Shaw, on the contrary, leans towards nominalism because he emphasizes the uniqueness of the individual. He regards the likenesses as superficial, the differences as fundamental, whereas Professor Babbitt would emphasize the likenesses and minimize the differences.

In the work as a whole, one feels that science hardly receives due recognition at the hands of Professor Shaw, despite his distinction between genuine science and what he terms "scientism." Why should we not, for example, recognize the creative joy of the scientific worker as well as of the artist? The tendency to overestimate the value of the æsthete, in comparison with that of the genuine scientist, may be illustrated by a concrete case. "Was Darwin," Professor Shaw asks, "of greater value to the spiritual life of humanity than Baudelaire?" (p. 300). The answer to this question does not seem to me to admit of doubt. Many would be inclined to go much further in such a comparison, and to accept the verdict of Professor Babbitt when he says: "An Edison, we may suppose, who is drawn ever onward by the lure of wonder and curiosity and power, has little time to be bored. It is surely better to escape from the boredom of life after the fashion of Edison than after the fashion of Baudelaire" (*Rousseau and Romanticism*, p. 350). As for Baudelaire, I can not escape the conviction that he stood in sore need of a wholesome naturalism. Certainly he never escaped from mediaevalism. Lacking both the insight and the courage to escape, and divided in his own breast, he became the prey of a morbid and distorted view of life. His pronounced sadism is a point in evidence. He believed in "the necessity for beating women," and was astonished that "people permit women to enter churches."

When it comes to settling the account between the inner and the outer, the self and the world, the course of the discussion leaves at one point a certain perplexity. This concerns the process by which the individual becomes possessor of the "soul-states" that are of supreme worth. The self is made to appear as an absolute centre, as somehow full panoplied for the business of life. "The individual," we are told, "must find the truth of his existence in himself alone" (p. 333). It is true that Professor Shaw makes it quite clear that the individual can not live an isolated life nor find his goal in himself alone. "Isolated selfhood, however rich its inner content," is not the ideal which he sets before us. But how does any such self come to have a rich content? In the criticism of the social order the individual no longer appears as its offspring either by heredity, environment or education. The world, both natural and social, seems at times to stand as a thing apart. Perhaps the difficulty which I feel arises from the fact that Professor Shaw is not here concerned with the genetic problem of the self but rather with its significance. Certainly his own doctrine of individualism as finally developed would place the self in the world-whole, there to find its joy and worth and truth. The value of the individual as against the external order has received classical expression, in the familiar question, "What shall it profit a man if he gain the whole world and lose his own soul?" But when we consider the processes by which any soul comes to have a content that makes it worth saving, we may well invert the question and ask, What shall it profit a man to gain his own soul and lose the whole world? Professor Shaw would perhaps recognize the significance of this question, and a recognition of all its implications would remove the perplexity to which I have referred.

The reader who follows the entire discussion from cover to cover will be impressed by the painstaking care with which the exposition is conducted, as well as by the wide acquaintance with the literature which is canvassed. But he will also find that the circumstances of its origin have left their impress in certain outstanding features of the work. It is unfortunate that repetitions appropriate to the classroom, and justified on pedagogical grounds, were not eliminated from the published result of these studies. A more universal vocabulary, a simpler structure, and a more rapid progress of the argument would have greatly enhanced its appeal. Because the book contains so much that is pertinent to the present fortunes of civilization, one would

wish for it a wider audience than it is likely to win in the form in which it now appears.

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La Responsibilité. Étude de Sociologie. Par PAUL FAUCONNET. Paris, Librairie Félix Alcan, 1920.—pp. xxvi, 400.

The fact that this book appears as in part the work of Durkheim gives a presumption in its favor, and it is only necessary to read into it and appreciate its method to find that it ranks somewhat above the ordinary work on sociology. Perhaps too many works in this field have devoted themselves to taking stock of the primitive mind, a conception which remains largely hypothetical in spite of such facts as could be observed since sociology has been contending with ethics for the title of science of human relations. It is therefore encouraging to follow the author through a somewhat thoroughgoing analysis of habits and customs of various peoples, not as these habits and customs appear in the haphazard observation of low races, but as they appear when organized in the legislative enactments and legal codes of peoples more or less advanced in culture. It is as a sort of comparative history of law and of moral and religious conceptions that the book possesses most of its value, and it is a little difficult to see what would remain of social doctrine if the former were left out. The book was written upon the suggestion of Durkheim, in part upon a basis of his lecture notes, and would have had his final revision but for his untimely death (Preface).

Philosophers and jurisconsults, says the author, have previously been engaged in logical and dialectical analysis of the abstract idea of responsibility. There are, however, facts of responsibility which are social in nature, since they belong to the species of juridical and moral facts. It is the purpose of this book to find, through an analysis of social facts, the elements of a theory of responsibility. Judgments pronounced by courts or by public opinion upon the juridical or moral obligation implied in acts are judgments of responsibility. They refer to the body of rules which forms an important part of all law; these rules and judgments are social facts. Much of the book is devoted to the description of these rules, which, when formulated in legislative enactments or legal codes, or when unformulated in public opinion, constitute what the author calls the "living and functioning institution of responsibility." These institutions constitute the ob-

jective social facts of responsibility. But there are also subjective social facts. The concept of responsibility, as the "abstract résumé of all the collective ways of thinking and feeling" (p. 4), and the individual's personal feeling with regard to his own responsibility, are social phenomena. Rules of responsibility when organized with reference to definite purposes are called sanctions. The person designated by a sanction as one upon whom disapprobation ought to fall is called responsible; one upon whom it ought not to fall is not responsible. Responsible and justly punishable are therefore largely synonymous terms.

In modern societies the normal adult human being is the proper subject of sanctions. But historically there have been other subjects, as infants, insane persons, dead bodies, animals and inanimate things, and collective groups. Tracing the relations among these leads to the negative conclusion that "no particular quality is universally required of a being in order that it may eventually play the rôle of patient" (p. 90). On the contrary, "Responsibility arises outside the responsible subject. It comes upon him because he finds himself engaged in situations that engender it" (p. 91). These situations are various, but the most common in all societies is the case of active and voluntary participation in crime. Another important case is that of indirect participation in the religious crime of contamination, which involves a substitution of patients, and thus suggests that responsibility is not an inherent property of individuals. All situations manifest the elementary principle of responsibility, namely, "the relation which unites the author, as a responsible person, with the act judged by reference to a sanction" (p. 173). Responsibility varies in degree according as the sanction, in being adapted to the patient, should, in virtue of a rule, be made more or less severe. There are many kinds of sanctions, among which the author designates the legal and moral, penal and civil, with the further distinctions of restitutive and repressive, etc. The book is concerned more particularly with penal sanctions in their connections with religious and moral institutions, and this throws a heavy emphasis on the institution of punishment; for, "punishment is an institution that can be isolated without difficulty from others, while the idea of definite responsibility as an institution disturbs our habits and seems to do violence to language" (p. 16). In imposing punishments societies act; their acts are determined by ideas and emotions, in a word proceed from forces; and the purpose is to find what are these elements of idea and sentiment and how they grow up in the collective consciousness. Such being the prob-

lem, comparative history is the only method that can solve it. But the historian loses faith in his method in questions of fundamentals, and with the philosophers, assigns as a foundation of responsibility a pre-social or extra-social human nature—the biological and psychological nature of the individual—and at times agrees with the metaphysician that the moral principle of responsibility is outside nature.

All philosophical and historical theories are based upon a common presupposition: that responsibility is reducible to causality. They are either determinist or indeterminist. The former fails because it conceives cause as the atomistic particular as expressed in the doctrine of individual liberty (p. 184), which is an evident over-simplification; the latter fails because it conceives the relation between author and act as metaphysical, whereas, "what is important is the relation which unites them from the point of view of opinion" (p. 198). All philosophers fail to understand the complexity and the social character of responsibiity. As a matter of fact the metaphysical character of responsibility does not differ from its secondary and variable character; besides it is first conceived in relation to crime and not in relation to the author of crime or patient. To prove this it is only necessary to refer to the fact of substitution of patients, and to the necessity of substituting for crime a symbol which represents it. The choice of symbol is largely indeterminate. "The primary fact is therefore the existence of a reservoir of forces which is nothing else than the representation of things held sacred—of moral values. When these forces are released, responsibility is created, without there being as yet any responsible persons. . . . It is not because there are responsible persons that there is responsibility. Responsibility preëxists, as a floating idea, and it is only later that it is referred to such or such subjects" (p. 244). But although we may assume that natural causation may react upon the idea of responsibility, "natural causality must not be confused with human causality in the moral sense" (p. 281). "What a contrast there is between the qualities of mind of the scientist and that moral tact, that sensitiveness of perception necessary to judge well; between the slowness and complexity of experimental method and that species of intuition or sentiment, difficult to define, which, often abruptly and without reflective stages, leads us to affirm or deny the responsibility of an accused person" (p. 286).

The function of responsibility is not retributive, not directed toward the criminal, but repressive (p. 299), directed toward crime itself as a sum of conditions which breed criminals. While it is originally and really collective in nature it has become individual by

an unwarranted extension in sense, but at the same time by an unreal limitation in scope. We have then to return, not to the primitive idea of collective responsibility, but to a responsibility based upon the solidarity of humanity. "It is rather in this case a qualitative transformation of the idea of individual responsibility. . . . It is in order the better to individualize it, one may say, that there is restored to responsibility, in a certain sense, its collective character" (p. 343). But it remains true that the more responsibility becomes narrowly individualized, the more certainly it tends to disappear altogether (p. 344). And yet the very attenuation of it which results from its being individualized has at the same time spiritualized it, so that in restoring its social character it loses the crude materialism which vitiates most 'social' explanations of it. "Man has a double origin, there are two natures in him; the one animal, organico-psychic, the other superindividual, resulting from his participation in a transcendent reality. That reality is social; it consists in a system of ideas and sentiments which make up the collective consciousness, and which very likely expresses society itself" (p. 367).

Since the argument rests in large part upon an analysis of law and legal procedure it must bear the burden of their fundamental weakness. And the characteristic weakness of law appears prominently throughout the book. It is that the law attempts to embody in negative, restrictive and repressive forms the positive, expansive, ebullient content of human relations. The eternal 'Thou shalt not,' of the law can never enjoin or permit the fulness of expression which the moral nature will always claim, and so long as the law attempts to force moral content into its empty forms, just so long will there persist the sorry succession of crime and punishment which 'publicists' and sociologists enjoy so much to describe. The idea that moral purpose should submit to precedent is inherently repulsive, and it is just that which makes the vast breach between morality and law. This of course does not mean that morality is capable of no organization, but it does mean that its organization must provide scope for its spontaneity. Moreover, responsibility cannot rest upon the accident that such and such customs happen to get formulated into accepted rules. For the criterion of responsibility in that case must be the backward reference to what as custom *was* adequate as a measure of value for human relations, but which can give no positive suggestions for the direction of effort. Again, all the elements involved in action—motive, intention, the end conceived as good—have their meaning not from comparison with precedents of fact, but by reference to what

is from the point of view of the act an ideal end. And this means that responsibility is an idea, a meaning; and since it is true that a meaning is also a fact, the question becomes one of *kinds* of facts. That the author sees this is clear from his distinction between 'natural' and 'human' causation. But what he does not seem to see is that the recognition of this distinction perhaps calls for a restatement *de novo* of his entire argument. It is questionable whether it is possible to begin with cause and work up to purpose; some element of purpose must perhaps be present in the assumption from which an investigation of 'fact' sets out. There may be some justification for the philosophical treatment of responsibility as an abstract idea. The author has written a book of more than ordinary value because he has himself done precisely what he criticizes the philosopher for doing. He has abstracted from the confusion of 'facts' an idea that comes dangerously (for the sociologist) near an ethical conception, and when the contact is made complete it will be interesting to see what there is left for the sociologist to say. The book has an extended bibliography, and closes with an appendix on "Responsibility and Liberty."

E. JORDAN.

BUTLER COLLEGE.

Lectures on Modern Idealism. By JOSIAH ROYCE. New Haven, Yale University Press. London, Humphrey Milford, Oxford University Press, 1919.—pp. xii, 266.

These lectures, originally delivered in 1906 at the Johns Hopkins University, are published under the editorship of Dr. Loewenberg of the University of California, as the first of Royce's posthumous works. No announcement is made regarding the character of the volumes which are to follow; but the present book must be regarded as an important contribution to the history of philosophy, and Dr. Loewenberg has performed a valuable service by editing the manuscript and bringing it to publication. In his Preface the editor calls attention to Royce's summary at the end of the second Lecture: "The post-Kantian idealism was noteworthy in its analysis of the conditions of knowledge. But it was still more noteworthy in its development of social concepts, and in its decidedly fruitful study of the relations which bind the individual self to that unity of selfhood which includes all individuals." And he lays emphasis upon the fact that Royce has shown by his analysis of the *Phenomenologie* that "for the early Hegel the state is an inevitable stage but not the goal of human

progress." Dr. Loewenberg's remarks seem to suggest that he believes that this remains true in substance also of Hegel's later doctrine, and that the opposite view which has so long prevailed is due to 'mutilations and perversions' of his teaching. It seems to me that this concluison can be clearly established, though the arguments obviousy cannot be given here, since they would extent beyond the limits set by the purpose of this review.

Readers of Professor Royce's book, *The Problem of Christianity*, could not have failed to be a little surprised by his statement in the Preface, that in regard to certain doctrines stated in that work he owed much more to Mr. Charles Peirce than to the tradition of idealism, and much more than to Hegel. There can be no doubt that Royce was justly impatient of having his views disposed of by attaching to them the label 'Hegelian,' and that he was conscious of having arrived at results that were different in important respects from those of Hegel and his School. And, again, he was well aware that to call any man, 'Lord, Lord,' is inconsistent with the very spirit of philosophy. In the final lecture of the volume before us there are some excellent remarks on this subject that are well worth consideration: "Hardly anything in fact is more injurious to the life of scholarship in general, and especially of philosophy, than the too strict and definite organization of schools of investigation. The life of an individual scholar depends upon individual liberty. And above all does the life of philosophy demand the initiative of the individual teacher as well as that of the individual pupil. A philosophy merely accepted from another man and not thought out for one's self is as dead as a mere catalogue of possible opinions. . . . The inevitable result of the temporary triumph of an apparently closed school of university teachers of philosophy, who undertake to be the disciples of a given master, leads to the devitalizing of the master's thought, and to a revulsion, in the end, of opinion" (p. 233).

Notwithstanding Royce's vigorous repudiation of 'discipleship' in philosophy, I think that no student of his later writings in particular will feel that Dr. Loewenberg has overstated the essential kinship of his author's thought to the writers treated in this volume: "The view of the post-Kantian Absolute as a universal community is not without interest for Royce's mental biography. His own doctrine of the community, though on its epistemological side intimately bound up with Peirce's doctrine of interpretation, is metaphysically not unrelated to the post-Kantian notion of a social absolute. The social motive is Royce's most characteristic motive. It inspired most

of his independent and original thinking. And it is the same motive which accounts in no small measure for his intellectual attachment to the idealism of Kant's successors" (p. xii).

The volume contains ten lectures: two dealing with Kant, one with "The Concept of the Absolute and the Dialectical Method," two devoted to Schelling, and four to Hegel, while the concluding lecture has the title, "Later Problems of Idealism and its Present Position." The lectures do not follow the lines of the ordinary histories of philosophy, nor do they repeat what is contained on this period in the author's *Spirit of Modern Philosophy*. They presuppose a general acquaintance with the systems discussed, and are devoted to an exposition, without criticism, of the central problems and results of the post-Kantian movement. There is less repetition than in any other of Royce's writings, and nowhere, I think, has he been more successful in presenting fundamental doctrines with comprehensive grasp and lucidity of language.

While all the Lectures are fresh and valuable, I believe philosophical students will feel especially thankful for the expositions (Lectures IV–VIII) of Schelling's *System des Transcendental Idealismus*, and Hegel's *Phenomenologie des Geistes*. These works, and particularly the last, require the kind of elucidation that Royce has here afforded before they can become intelligible to a reader of the present day. Windelband has rightly called the *Phenomenologie* the most difficult work in the history of philosophy, and few who have studied it would fail to agree with this verdict. Royce had a great store of knowledge in regard to this work and the background from which it arose, having frequently made it the subject of his seminars of graduate students, and it is most fortunate that we have in these lectures some of the results of his extensive studies in this field. That he has not given us more is the only ground for regret. In particular, one cannot help wishing that he had treated more at length the final sections of the *Phenomenologie*, on Religion and Absolute Knowledge, which are of such fundamental importance in comprehending the real goal and outcome of Hegel's system. It may be that among the material still to be published will be found a fuller discussion of these subjects. It is not possible in this review to give any summary of the argument or the results of these lectures. Nor does this seem the place to attempt any discussion of particular interpretations. There can be no doubt that, as Dr. Loewenberg has pointed out, in emphasizing the essentially social and spiritual character of the post-Kantian conceptions Royce has performed a service that is specially

valuable at the present time when there is a tendency to identify the philosophy of the great teachers of Germany with the standpoint of modern industrial and military Germany. In 1865, Liebmann in his work, *Kant und die Epigonen*, set the program for the main lines of the activity of German philosophical scholarship for more than a quarter of a century in the famous words, "*Es muss auf Kant zurückgegangen werden.*" And in the years immediately preceding the war it was sometimes reported that German philosophy, moving onwards from the Kantian standpoint, was retracing the steps of the post-Kantian period and renewing its interest in the writers of its greatest period. Was there in Germany during this half century any real return to Kant and to the true spirit of his successors? The forces drawing in the opposite direction seem to have been too strong; whatever may have been true of philosophy, the eyes of the nation were blinded so that it could not see and its mind darkened so that it could not understand all that its own prophets had told it. But, nevertheless, these prophets remain the teachers of mankind, and still provide the strongest link that binds Germany to the rest of the civilized world. When a real reconciliation comes about, it will be based upon the rational principles of human life and society that the German philosophers sought a hundred years ago to bring to the consciousness of their generation.

J. E. CREIGHTON.

CORNELL UNIVERSITY.

NOTICES OF NEW BOOKS.

Studies in Contemporary Metaphysics. By R. F. Alfred Hoernlé. New York, Harcourt, Brace and Howe, 1920—pp. 306.

This volume of Professor Hoernlé may be heartily recommended to anyone who wishes a clear, compact and well-written presentation of the classic, idealistic tradition in philosophy. The author acknowledges his indebtedness to Bosanquet, and each one of the studies which comprise the volume is, indeed, an exposition of the way in which the principles of Bosanquetian idealism may be applied to some one of the metaphysical problems which have been prominent in the discussions of recent years. Two dominant motives and interests determine the argument throughout. The first lies in the desire to "save the appearances," to ascribe to each aspect of life and reality its own autonomy and integrity, and not to allow it to evaporate into something else. The world of sense experience, the existence of living bodies, the life of mind and of self must all be saved and protected against the tendency to turn them into mere forms and appearances of something which they themselves are not. But secondly, there is the no less insistent need for adequate continuity amongst these autonomous aspects of life and nature. They are to be envisaged within a setting which comprises them all, which has the characteristics of wholeness and totality, and which makes it possible to provide for a stable hierarchy of all the various appearances. "Accept the appearance in question, and exhibit it in its place in the order of the universe"—this is the command and the task of all philosophy.

From within the point of view thus defined, the author has achieved a highly creditable piece of work. Each study exhibits the results of wide reading, and a painstaking analysis of recent and contemporary philosophical writing. One of the best chapters is that on "Mechanism and Vitalism"—obviously just the kind of problem in which the desire to "save the appearances" of vital purposiveness, and also to provide for systematic wholeness and escape the arbitrary pluralism of piecemeal supernaturalism-vitalism—finds abundant opportunity for successful display.

The present reviewer, however, finds that the reading of this book leaves in his mind one insistent question. It is one thing to cope with problems from *within* a compact set of motives and a definite philosophical system, and from *within* the spirit of the classical philosophical tradition. This the author has achieved with distinction. It is another thing to survey the rise, the career, and the meaning of that tradition itself, to exhibit it within the setting of the entire group of cultural forces, most of which

are wholly non-philosophical, which have brought it into being, moulded it, and—conceivably—rendered it inadequate after these cultural forces have shifted their energy and their direction. This, the author can hardly be said to have essayed at all. But just this sort of inquiry would seem, at the present time, to be most urgently called for, and to be an indispensable preliminary before one has achieved the right to approach the specific problems of life and society from the point of view of any one philosophical system. The guess may be hazarded that, had the author set out thus to survey the wider setting of the classic tradition which he so admirably formulates and defends, he would have found himself dealing, at greater length and with perhaps more sympathy, with certain aspects, at least, of the pragmatic and humanistic movement, and he would have concerned himself somewhat more with the relation between social experience and processes and the organized thinking of philosophy. But this would have meant writing another book instead of this, and is, accordingly, hardly a fair criticism of this book. These studies remain what they are meant to be—an application to current, specific metaphysical issues of the main conviction of an "unbroken line of philosophers," that there is a systematic wholeness in the varied aspects and appearances of our world and our experience.

GEORGE P. ADAMS.

THE UNIVERSITY OF CALIFORNIA.

The Historical Method in Ethics and Other Essays. By JOHN HANDYSIDE, Liverpool, The University Press; London, Constable and Company, Ltd., 1919—pp. xvi, 97.

These essays were found among the papers left by Mr. John Handyside, late lecturer in the University of Liverpool and second lieutenant in the King's (Liverpool) Regiment, who lost his life in the war. They are published with a Biographical Note by Professor A. S. Pringle-Pattison, who speaks of his former pupil and assistant as one of the acutest and most thoughtful of the younger generation of philosophical teachers. A study of the little volume will bring home to the reader the loss suffered by scholarship in the death of this gifted young man, who, like so many of his type, "counted his life a little thing to give in so great a cause."

One is impressed with the genuine philosophical spirit which pervades these essays, with the writer's fine, critical judgment, with his independence of thought and thoroughgoing intellectual honesty. We can readily understand that he was "distrustful of easy solutions and premature syntheses," as Professor Pringle-Pattison declares; he was evidently impelled to work out the problems that interested him for himself and in his own way: he was seeking to find the light, not to marshal arguments in support of a preconceived theory. This is not to say that he approached

his task without a philosophical standpoint: he sympathized with the thought of modern English idealism, but not in the sense that any problem to which he turned his inquiring mind had reached its final solution.

The first essay, "The Historical Method in Ethics," is wider in its scope than the title indicates: it aims to lay the foundations of ethics and deals with the nature, the presuppositions, and the method of this science. Whether one accepts Mr. Handyside's conclusions or not, there is no doubt that the kind of book he intended to write to develop his conception of the subject would have been a valuable contribution to ethical literature. The second essay, on "The Absolute and 'Intellect,'" takes up Spinoza's denial of the predicability of intellect to God; and with this as the starting-point discusses the problem of knowledge. A conclusion is reached similar in spirit to that of Hegel. "Quality and relation constitute the World; sense and thought constitute knowledge, which is the realization of the 'faculty' intellect. Quality cannot exist except as the content of sense; relation cannot exist except as the content of thought. The World, therefore, or Reality, cannot exist except as the content of sense and thought combined, the content of an absolute knowledge, the functioning of Absolute Intellect" (p. 71). The third essay, "System and Mechanism," examines the notions of mechanism, organism, teleology, and self-activity or free will. Activity, as determination of whole by whole, teleology, as determination of whole by part, organism, as determination of part by whole, are found to be all consistent with, and indeed to imply, mechanism, as the uniform determination of part by part. So far as "we approximate to a view of the universe as a single and unique whole, so far the concepts which involve a reference to such a whole will be of value for us" (p. 97).

I have been able, in this short notice, to give no more than a bare skeleton of Mr. Handyside's three essays. They deserve careful study, for they deal with fundamental problems of ethics, epistemology and metaphysics, and discuss them in the manner of the trained thinker. They arouse in the reader the desire to delve deeper into the questions at issue: a book that does that, certainly justifies its existence.

FRANK THILLY.

CORNELL UNIVERSITY.

Oeuvres de Maine de Biran. Accompagneés de Notes et d'Appendices. Publiées avec le concours de l'Institut de France par PIERRE TISSERAND. Tome I. Le Premier Journal. Paris, Félix Alcan, 1920—pp. lxxv, 312.

Philosophical scholars in all countries will feel a sense of gratitude to M. Tisserand and to L'Institut de France for this gift of a new and carefully edited edition of the works of Maine de Biran. The edition will contain twelve volumes. The volume before us gives the author's first

Journal, and two other volumes are announced as already in press: Tome II, *Mémoire sur l'habitude*, and Tome III, *Mémoire sur la décomposition de la pensée*. The work is undertaken with a desire to promote a truer estimate of the importance of French contributions to psychology as compared with those of England and Germany, which have been widely made known by the writings of Taine and Ribot. "The truth is that this science has never ceased to be cultivated and to bear fruit in the country of Descartes and Malebranche. Moreover, it would be easy to show that an unbroken chain binds together the French psychology of the present time, which so splendidly maintains its traditions, with its founders. The greatest name of the intermediate period is indisputably that of Maine de Biran" (pp. i–ii).

The charge of obscurity which is often brought against Maine de Biran does not seem to M. Tisserand to be deserved. Taine has humorously remarked that de Biran must have lived in a cave a hundred metres deep. But the chief source of this apparent obscurity is to be found in the errors in the edition published by Cousin, errors for which the editor, not the author, was responsible. For example, in a hundred pages of Cousin's edition containing *l'aperception immediate*, there are more than three hundred variations from the manuscript,—omissions, contradictions, etc., which render the text unintelligible. The edition of Ernest Naville, M. Tisserand claims, relieves in part this impression of obscurity without entirely removing it. The present edition is to contain in addition to writings hitherto published: *Mémoire sur la décomposition de la pensée; La Correspondence avec Cabanis, de Tracy, et Stapfer; Diverses notes inédites sur l'histoire de la philosophie;* and the *Journal* contained in the volume before us.

Readers will find in the Introduction contributed by the editor to this first volume a careful summary and analysis of its contents. In addition to the Journal it contains a number of fragments and short papers which belong to the same period and which throw light upon this stage of the author's thought. The value of these early writings is that they make it possible to understand the development of his philosophy. "Of Maine de Biran one scarcely knows more than the philosophy of effort or of the Ego. This is indeed his central doctrine. But if one wishes to understand its sources it is necessary to take account of the writings which form the greater part of this volume. It is here that one is able to grasp the original character of the philosophy of Maine de Biran. These writings constitute a kind of psychological autobiography, the facts which they disclose belong to an unique order, and are considered by him as irreducible. For him intuition is not the anticipation of a deductive process; he has a distaste for the spirit of system; his philosophy is a philosophy of continuity, of contingency" (p. ii).

In form and appearance this edition promises to be a worthy monument to the illustrious author. Its publication at this time is a most gratifying evidence of the vitality of French philosophical scholarship, and also of the fact that the French people have not forgotten in war their just pride in their national literature or their care for its preservation.

J. E. C.

CORNELL UNIVERSITY.

Philosophy and the Christian Religion. An Inaugural Lecture delivered before the University of Oxford on May 4, 1920. By CLEMENT C. J. WEBB, Oxford, Clarendon Press, 1920.—pp. 23.

On taking up the duties of this newly established chair of the Philosophy of Religion in Oriel College, Professor Webb refers in his inaugural lecture to three Oriel men who have specially distinguished themselves in the history of religious thought, and who may accordingly be regarded in some sense as his predecessors. These are Butler, Newman, and Mathew Arnold. "Notwithstanding striking differences, these three men . . . were linked together not only by the bond of academic tradition but by a mastering love of righteousness, which made them all in their philosophy of religion emphasize above everything else the connexion of Religion with Morality" (p. 4). They were all also typically English in shunning 'ambitious efforts of metaphysical construction and concentrating attention upon the field of experience directly before them.'

Professor Webb finds that the foundation in Oxford of such a chair as that which he holds, marks an important change in the intellectual and religious atmosphere of the University. Among other things, the "Philosophy of Religion is seen to be something which neither would nor could take the place of Religion itself," . . . though "it becomes plain that to philosophize effectively upon Religion while having no religion is as impossible as to philosophize upon Art while not oneself possessing the experience which is to be had only in and by the actual enjoyment of Art as it exists" in its concrete manifestations (p. 11).

In his remarks on the rival claims of Philosophy and Religion, Professor Webb sums up as follows: "Philosophy cannot suffer Religion to claim as it were a secret chamber, into which Philosophy may not intrude; nor can Religion suffer Philosophy to treat as illusory that which Religion knows by experience to be real. But, as Philosophy must allow Religion to claim that the witness of the religious experience to the nature of Reality be not ignored, so must Religion allow Philosophy freely to examine and criticize the religious not less than any other kind of experience" (p. 14). The conflict between Philosophy and Christianity may seem more irreconcilable than that between Philosophy and the other religions; but this is because Christianity is not less, but more philosophical

than they. Christianity has rendered important services to Philosophy in the course of its history, particularly by emphasizing on the one hand the importance of historical fact and concrete process, and on the other by keeping fast hold of what is Universal and Abiding in the flux of things. Again in its doctrine of God as Spirit at its highest manifestation, "Christianity gave the greatest assistance towards the development of the notion of Personality, a notion of the profoundest importance, for which ancient philosophy had no name at all" (p. 20).

J. E. C.

Cornell University.

Du rôle de la mémoire dans nos conceptions métaphysiques, esthétiques, passionelles, actives. Par Eugene D'Eichthal. Paris, Félix Alcan, 1920.—pp. 198.

The author finds in memory the source of all our knowledge, feelings and actions. He draws his conclusions from an examination of metaphysical concepts, aesthetic pleasures, passions and actions in general, each of which he treats separately. His method is purely descriptive. He waives the question 'why,' and when confronted by that of origin, he dismisses it, with a gentle reminder to the reader that he deals only with civilized man. His position throughout is empirical. He might well say with Locke that mind is an empty tablet upon which experience writes, adding, however, that experience is racial as well as individual and that the tablet is *memory*. The term memory is used indiscriminately to denote the material stored, the place where it is stored, and the function that stores it, and varies with the needs of the context. Thus, while the author gives some interesting psychological descriptions, and suggests many practical applications of them, his conclusion is not well established, because of the looseness of the terms and the superficial relations established between the data.

At the outset we are asked to note two facts. First, between the stimulation of the sense organ, and the conscious perception of the stimulant, there exists a fraction of a second. Therefore the content of consciousness is always past experience. Second, the impressions stored by memory may not be exact reproductions of the phenomena, but modified by a subjective factor that has as its end the preservation of the organism. In its contact with the external world, the organism becomes conscious of a 'self' which remains the same in all experience. Philosophy transforms this notion into a fundamental concept. In reality the concept of personality is nothing but the stamp of past phenomena (retained in memory) upon the new. This explanation of a metaphysical concept by a psychological analysis is characteristic of the entire volume. Thus for the Cartesian "Je pense donc je suis," the author substitutes, "Je me souviens, donc je suis" (p. 30).

In the struggle for life, memory not only aids by recalling useful experience, but also gathers a repertoire of related notions which, operated upon by the other faculties of mind, gives us all our general ideas. When memory furnishes many instances of concomitant agreement, the antecedent is called the cause and the consequent the effect. The mind, no longer satisfied with the 'how' of things, demands the 'why,' and is led by the imagination to extend this idea until it reaches the notion of God and final causes. Not only are these ideas logically weak, as their origin in the memory testifies, but they are inconsistent with the freedom of the will which every one experiences. The determination of choice between two lines of action lies in the comparison of the present, not with the future, but with the past. Experience points to a better being which corresponds to certain general principles in human experience. Practically, therefore, the memory utilizes the past to instill in men a motive in the choice of action which is adapted to the needs of both individual and society. In this manner the author accounts for the evolution of ethical conduct. In a similar way, *a priori* concepts, dogmas, laws, and beliefs resolve themselves into the experiences which were either useful to our forefathers, or were elaborated from the simple data of the memory into general ideas. Not only is memory responsible for their origin, but for their preservation through habit, education, religion and like institutions.

The world presents a series of impressions in an irregular and planless way, making it difficult for the memory to retain them. If, however, their occurrence is regular and rhythmic, the work of the memory is facilitated and a feeling of satisfaction arises. When this is applied in color, line and sound, the senses receive a general impression that calls forth the aesthetic pleasures. Thus the beautiful supposes a certain continuity attested by the memory that there exist no gaps in the work (p. 115); and that it is harmonious, having an underlying order.

The author distinguishes sharply between the emotions and the passions, using as criteria of the former, duration and continuity with character as a whole. Through the accumulation of affective images, memory furnishes the motive power that sets into action the passions. In recalling the results of actions it directs the passions into channels useful to self and society, without destroying the initial fire characteristic of them. In a similar way, through the recall of the past, memory guides and determines action in general.

GLADYS BLEIMAN.
ALFRED UNIVERSITY.

Annotated Bibliography of the Writings of William James. By RALPH BARTON PERRY. New York, Longmans, Green and Co., 1920.—pp. 70.

In this little work Professor Perry has made a useful contribution to the study of William James by collecting in chronological order the titles

of all the writings which are known to have come from his pen. To each is added a brief note indicating its subject-matter, various reprints, and translations into foreign languages. "In view of the fact that much of James's most important thought appeared in the form of essays and reviews, often under a title which gave no clue to the contents, some such guide as this is indispensable to an adequate knowledge of his contributions to philosophy and psychology." The usefulness of the book is greatly increased by the addition of an alphabetical index.

G. R. M.

CORNELL UNIVERSITY.

The following books have also been received:

Essays in Critical Realism. A Coöperative Study of the Problem of Knowledge. By DURANT DRAKE, ARTHUR O. LOVEJOY, JAMES BISSETT PRATT, ARTHUR K. ROGERS, GEORGE SANTAYANA, ROY WOOD SELLARS, and C. A. STRONG. London, Macmillan and Co., 1920.—pp. viii, 244.

The Foundations of Character. By ALEXANDER F. SHAND. London, Macmillan and Co., 2nd edition, 1920.—pp. xxxvi, 578.

In Search of the Soul and the Mechanism of Thought, Emotion and Conduct. By BERNARD HOLLANDER. Two Volumes. London, Kegan Paul, Trench, Trubner and Co.—pp. x, 516; viii, 362.

Freedom and Liberty. By WILLIAM BENETT. The Oxford University Press, 1920.—pp. vii, 368.

A Theory of the Mechanism of Survival. The Fourth Dimension and its Aspects. By W. WHATELY SMITH. London, Kegan Paul, Trench, Trubner and Co., 1920.—pp. 196.

Recurring Earth-Lives; How and Why. By F. MILTON WILLIS. New York, E. P. Dutton and Co., 1921.—pp. 92.

The Life Indeed. By JOHN FRANKLIN GENUNG. Boston, Marshall Jones Co., 1921.—pp. xiv, 370.

Metaphysics of Energy. By GHANSHAMDAS RATTAMAL MALKANI. Amalner, Indian Institute of Philosophy.—pp. viii, 184.

Évolution Intellectuelle et Religieuse de l'Humanité. Par PH. HAUSER. Tome I. Paris, Librairie Félix Alcan, 1920.—pp. xiv, 804.

La Philosophie Moderne depuis Bacon jusqu'à Leibniz. Par GASTON SORTAIS. Tome I. Paris, P. Lethielleux, 1920.—pp. x, 592.

Les Phénomènes de Hantise. Par ERNEST BOZZANO. Traduit de l'Italien par C. de Vesme. Paris, Félix Alcan, 1920.—pp. xii, 312.

Psychologie de l'Enfant et Pédagogie Expérimentale. Par ED. CLAPARÈDE. Huitième edition augmentée. Genève, Kundig, 1920.—pp. xl, 572.

La Théorie de la Certitude dans Newman. Par C. BONNEGENT. Paris, Félix Alcan, 1920.—pp. xii, 208.

L'Évolution Psychologique et la Littérature en Angleterre, 1660–1914. Par LOUIS CAZAMIAN. Paris, Félix Alcan, 1920.—pp. vii, 270.

George Sand. Mystique de la Passion, de la Politique et de l'Art. Par ERNEST SEILLIÈRE. Paris, Félix Alcan.—pp. xii, 456.

Du Rôle de l'Idée de l'Instant dans la Philosophie de Descartes. Par JEAN WAHL. Paris, Félix Alcan, 1920.—pp. 48.

Les Philosophies Pluralistes d'Angleterre et d'Amérique. Par JEAN WAHL. Paris, Félix Alcan, 1920.—pp. 324.

La Crisi del Pensiero Moderno. Per ALESSANDRO CHIAPELLI. Citta di Castello, 1920.—pp. xxviii, 376.

La Filosofia di G. Locke. Par ARMANDO CARLINI. Volume II. Firenze, Vallecchi, 1921.—pp. 378.

L'Azione. Per MAURIZIO BLONDEL. Traduzione di Ernesto Condignola. Two volumes. Firenze, Vallecchi, 1921.—pp. 288, 376.

Das Problem der Geltung. Von ARTHUR LIEBERT. Zweite Auflage. Leipzig, Felix Meiner, 1920.—pp. vii, 262.

Von Organismus der Sprache und von der Sprache des Dichters. Von MARGARETE HAMBURGER. Leipzig, Felix Meiner, 1920.—pp. vii, 190.

SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *The American Journal of Psychology*; *Ar. de Ps.* = *Archives de Psychologie*; *Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie*; *Ar. f. sys. Ph.* = *Archiv für systematische Philosophie*; *Br. J. Ps.* = *The British Journal of Psychology*; *Int. J. E.* = *International Journal of Ethics*; *J. of Ph., Psy., and Sci. Meth.* = *The Journal of Philosophy, Psychology, and Scientific Methods*; *J. de Psych.* = *Journal de Psychologie*; *Psych. Bul.* = *Psychological Bulletin*; *Psych. Rev.* = *Psychological Review*; *Rev. de Mét.* = *Revue de Métaphysique et de Morale*; *Rev. Nto-Sc.* = *Revue Nto-Scolastique*; *Rev. Ph.* = *Revue Philosophique*; *Rev. de Ph.* = *Revue de Philosophie*; *R. d. Fil.* = *Rivista di Filosofia*; *V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie*; *Z. f. Ph. u. ph. Kr.* = *Zeitschrift für Philosophie und philosophische Kritik*; *Z. f. Psych.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane, I. Abtl. Zeitschrift für Psychologie.* — Other titles are self-explanatory.]

Herbert Spencer's Work in the Light of His Life. L. L. BERNARD. Monist, XXXI, 1, pp. 1–35.

Though he considered himself a philosopher, Spencer is remembered primarily as one of the two greatest figures in the development of Sociology. It is difficult to deduce, from his Autobiography, what led him to become interested in the subject, but the idea of writing a book on it grew out of his classification of the sciences. His early interest in political problems was largely practical, but the germs of his later writings are already revealed in the *Social Statics*. No doubt Comte influenced Spencer, to a far greater extent than the latter would admit, to turn his attention more particularly toward the social sciences. He seemed to have no regular plan in writing and apparently drifted into literary work. The influence of early ill-health is manifest both in his choice of occupation and in his method of procedure. In the *Sociology*, as everywhere, Spencer's great contribution consisted not so much in new concepts and ideas as in the richness of analysis and synthesis with which he illuminated every idea he touched. His conclusions lack vitality and validity because unenlightened by contemporary history. He clothed ill-adapted generalizations in the raiment of primitive and medieval practices and never thoroughly understood the world in which he lived, much less that which was to come. Although he grew up in the age of industrialism, Spencer failed to see that over-industrialization would lead to foreign exploitation and wars, and remained unfriendly to the necessary expansion of state functions in spite of the growing complexity of modern society. All this was due in part to non-conformist prejudices and county localism as well as to intellectual stubbornness and contempt for the opinions of others.

The state of his health probably affected the nature of his philosophy, while the inner struggle between the desire for self-sufficiency and the inadequacy of his own strength must have projected itself into his understanding and evaluation of society. At once the most radical and the most conservative of men, Spencer regarded many of the so-called reform movements as signs of weakening social fibre. The only safeguard, so he thought, lay in weakening the power of the state and increasing the range of activity of private associations. Much of this later conservatism was undoubtedly temperamental and personal, as is shown in a few remarks about the stupidity of the public in so coldly receiving his books. Another result of his long invalidism was to greatly restrict his output and to force him to use second-hand material. And because of lack of material he was driven more and more into those ultimate generalizations, based largely upon reflection, which, though not standing the test of time, were extremely valuable in opening up new lines of thought and in promoting constructive and critical thinking. Free, even in youth, to develop intellectually as he wished, he was thus stimulated to unhurried, independent thinking and wholesale generalizations. The extreme activity of his mind led to the same result and also to serious errors. A bold adventure in the world of thought, Spencer's work, in spite of all these faults, was that of an intellectual pioneer and true philosopher.

H. R. SMART.

Un Savant Français: Henri Poincaré. A. DENJOY. Rev. Ph., LXXXIX–XC, 11 et 12.

This article purports to be an appreciation of Poincaré as a *savant*, a description of his method, and an explanation of his genius. Poincaré's reputation as a scientist is easily recognized by the fact that upon his election to the French Academy he was already a member of forty other academies. Such an achievement naturally calls for consideration and explanation. It was his ability to comprehend the *ensemble* of rational science, and the almost instinctive habit of searching for causes, which predestined Poincaré to become one of the most remarkable representatives of positive philosophy. His incomparable mastery of the instrument of analysis and his vast acquaintance with modern physics made of him a judge capable of appraising a theory and of pointing out its weak points and of augmenting its value. The author attributes Poincaré's genius to the functioning of the subliminal self, whose potentiality Poincaré knew how to utilize. It is a well-known fact that solutions vainly sought for in the course of the day, will, after a night's rest, come to one spontaneously. Particularly is this the case with mathematics. Poincaré himself speaks of these sudden *illuminations de l'esprit* as "manifest signs of an anterior protracted unconscious labor."

J. H. GRIFFITHS.

The Ethical Significance of Time. James Westfall Thompson. Monist, XXX, 4, pp. 481–502.

Time, which is perhaps the greatest force of nature, conditions the production of everything. Both space and time have significance for the physical sciences, whereas only time is significant for the moral sciences. Time inseparably accompanies all our perceptions; for perceptions are possible only where differentiation is made, and differentiation is possible only when reference is made to past experience; but it is more especially evident in our moral life, where feelings are influenced by duration. In a moral sense, time has no value for us except as we employ it; the loss of time is practically a tragedy for the wise man. Moreover, progress may be defined as the 'intelligent valuation of time'—not only of present and future time but of past time as well. Indeed, it is most essential for a person or a nation to use aright the heritage from the past. The measurement of time is in terms of moral value, whereas that of space is in terms of physical value; hence Orphism, being dominated by temporal concepts, evolved the idea of justice and righteousness and finally evolved a religion, while early Greek theology, dominated by spatial concepts, developed into physical science. Only because the ancient Greeks turned from this spatial interpretation to the temporal did they create a moral philosophy and originate conceptions of justice, religion and society. The fact that changes of season brought each its fitting time for certain agricultural performances suggested notions concerning justice. Moreover, changes of season suggested the worship of celestial bodies. Because past, present and future are attributes of finitude, St. Thomas Aquinas eliminated them from the experience of God, for whom all is an 'eternal vision.' As man is powerless to reinstate the past or to control the future, many legends sprang up in the Middle Ages in which the hero lives through an experience of many years' duration and yet is as little affected by time as if the experience had occupied the span of a moment. These legends have significance, however, in that they show time to be what we make it.

Marjorie S. Harris.

Morality as Coercion or Persuasion. M. C. Otto. Int. J. E., XXXI, 1, pp. 1–25.

Professor McGilvary's discussion entitled, "The Warfare of Moral Ideals," defends the double thesis that morality is relative and that, in the long run, considering (as the sophisticated man does) that moral judgments as well as swords are weapons, might makes right. The objection to the position is not to the contention that morality is relative, but to the absolutistic character of the method of adjudication. Assuming (1) that *might* means coercion and does not lose its distinctive meaning by cover-

ing that of persuasion as well (in which the ideal rather than something external to it functions as the ultimate compelling force), and (2) that the purpose of the paper under discussion is not to consider how moral ideals rise and fall but to establish a theory of the nature of right and wrong; granting also, what is by no means clear, that might has played the only rôle in moral history, what is the nature and function of morality implied by the theory that might makes right? It thrusts us from an Absolute to a regiment of absolutes. It carries the Treitschkian philosophy to its logical conclusion, thereby abolishing morality between individuals as well as between nations, at least morality as it has always been conceived—the authority of an ideal. Our very language leads advocates of warfare morality to employ terms which disguise the significance of the theory and prevent the recognition of its consequences. Warfare morality is not that of a Nietzsche whose superman is ethically right, but of a Thrasymachus, to whom the interest of the stronger is exactly what right means. If it were so recognized its moral judgments would certainly lose any power as weapons. Practically, the theory would mean ruthless self-assertion socially and, in the narrower field of the individual life, surrender to the strongest impulse—a state of affairs which leaves the term morality meaningless. But such elimination of morality is not the only alternative open to one who believes that "however it may be with the Absolute and his standards, we mortals, having no natural access thereunto, can make right and wrong out of such materials as are at our disposal and can very well make shift with the result." In the case of the individual life, intelligence *makes* a more comprehensive ideal, in which the old conflicting ones have a proportionate representation. Warfare morality supposes intelligence to be used in the selection only of means, not of ends: whereas the natural history of intelligence would show that the creation of new ends wherein old ones are adjusted is its very function, and the essence of morality. The answer to the contention that might makes right is that we will *make* it something different; we will define right and wrong in accordance with the end we seek, the completest life for every human being. We will call right Adjustment. We can because we have. Might-right in games we call unclean sport, in law, corruption; the history of civilization has been one of a struggle to substitute conciliation for coercion, to secure the richness of life resulting from the adjustment of conflicting claims by solving the problems underlying the conflict. Professor McGilvary is of course right in emphasizing self-realisation. Self-respect and not self-denial is necessary to a worthy social state, but respect for the kind of self which makes self-realisation possible for others. If all ideals are valid, the program should be to use intelligence for the realisation of as many as possible, in proportion to their importance, rather than to encourage a free-for-all fight among desires.

EVE T. KNOWER.

Plato and the Judge of Conduct. RUPERT CLENDON LODGE. Int. J. E., XXXI, 1, pp. 51–65.

To the question who, for Plato, is the judge of conduct, Shaftesbury and the Cambridge Platonists answer *everyone*, while the later Platonists answer *the philosopher only*. In the dialogues we find eight replies: (1) Everyone, (2) The many, (3) The interlocutor, (4) The good man, (5) The experienced man, (6) The wise man, (7) The philosopher, (8) The guardian. Upon examination we find the significance of the eight replies to be: that the moral sense inhabits every normal man; that the judgment of the many is valid as long as it is judgment and not conservative habit or blind haste to act; that, with a little more emphasis upon the technical side, all parties to an ethical discussion are competent to weigh answers and collaborate in arriving at conclusions; that the good man is peculiarly fitted to judge conduct, as being in his own character the moral standard; that experience increases the ability of the good man; that the wise man who sees the whole of life in relation to a single aim, the idea of the good, is eminently fitted to judge; and that Plato's ideal philosopher with every advantage of character, birth, and training is the ideal judge, while the guardian or legislator is merely the philosopher turning to practical affairs. There is something of philosophy in every normal human being, which environmental stimulus and dialectical training can bring out and develop. This is the principle of unity entitling members of each of the eight groups to judge conduct. But few have the gift of highest birth, and still fewer the ability to take advantage of the highest philosophical training. Thus, while everyone is competent to give some sort of judgment on ethical questions, only the philosopher is judge in the fullest sense; so that each of the two answers given at the beginning of the paper is partly correct and partly incorrect.

EVE T. KNOWER.

The Logic and Metaphysics of Occam. JAMES LINDSAY. Monist, XXX, 4, pp. 521–547.

Occam's logic is one of the aspects of his philosophy which retains an interest for the present time. For him, the universal was a concept attained through abstraction from individual things, hence had no real value; the individual alone was real. In its emphasis upon the individual, this thesis indicates the way to a real science; but is at the same time hostile to a true evaluation of the universal and necessary at which science aims. Sometimes Occam held that the universal is a real outside of the knowing mind. In the individual mind, it is a particular but it is universal in that it is a sign of many things. It is merely a sign, however, and not a copy of things, for things are different from our ideas concerning them. The universal is an *intentio mentis*, hence its charac-

ter is conceptual rather than substantial. Were it substantial, the individual could not arise, since its universal would already have reality in another. However, Occam yielded the universal some sort of objective existence. His treatment of the individual is valuable, since he showed that, in a sense, it has not the reality obtaining in the universal—a reality which the universal has by virtue of its changelessness. In treating of insolubles, Occam granted validity to arguments which show propositions both true and false and he accepted the consequence: that no such propositions are possible. In general, Occam's logic is an anticipation of the 'dawn' of modern English philosophy. As to his metaphysics, Occam anticipated Kant in rejecting the proofs of rational theology for the existence of God; yet he fell back on authority. He considered that the First Cause is a necessary hypothesis but emphasized its conservative rather than its productive activity and thus anticipated Descartes. Furthermore, he held essence and existence to be really identical. Again, he was a voluntarist and considered the will to be absolutely self-determined. Occam thought the individual to be the true substance, capable of being known intuitively. Substance distinguishes the individual from the universal. Again, for him the mind is identical with its faculties. At the same time he distinguished the vegetable and sensitive souls from the intellective soul, which is superior to the other two. Furthermore, knowledge is not for him limited to the *sensibilia*, for intuitive knowledge grasps the *intellectibilia*. In concluding, it may be said that we owe much to Occam; the empiricism of to-day is a re-statement of the nominalism of his time.

MARJORIE S. HARRIS.

NOTES.

Note on a Passage in the *Impossibilia* of Siger of Brabant.

There is a brief passage in the first topic treated in the *Impossibilia*, which has been misunderstood by Baeumker in his learned edition of that work.[1] The passage occurs on page 2, l. 27, of Baeumker's edition, and reads as follows: "Illiud quod possibile est, ex extrinseco est possibile vel naturam habet possibilis. Et a destructione consequentis: quod non est possibile, vel naturam non habet possibilis per extrinsecum aliquod, vel per defectum extrinseci non habet naturam possibilis. Intelligentiam autem esse est tale quia non videtur dependere ex aliquo, ad cuius non-esse ipsam non esse sequatur."

Baeumker (p. 125) translated the passage as follows: "Was möglich ist, ist durch ein Äusseres (ein von ihm verschiedenes Seiendes) möglich oder hat durch ein solches die Natur des Möglichen. Also, wenn wir die Abfolge in ihr negatives Gegenteil verkehren: Was nicht möglich ist, dem kommt es entweder durch ein Äusseres zu, dass es nicht die Natur des Möglichen hat, oder aber es hat wegen Mangels eines Äussern, durch das es möglich gemacht werden könnte, die Natur des Möglichen nicht. . . . Das Sein der Intelligenz ist . . . derart, dass sie nicht von irgend etwas abzuhangen scheint, auf dessen Nichtsein ihr eigenes Nichtsein folgte."

Baeumker himself admits that the argument as thus translated is obscure, and in fact without meaning, unless a great deal is inserted and supplied which is not in the text. Baeumker suggests in fact that the text is corrupt,[2] and proceeds to supplement it in a way scarcely warranted. This circumstance alone is suspicious, and any attempt to make a sequential argument out of the text as it stands has prima facie justification. I believe that the text as we have it is correct and makes good sense. Baeumker misunderstood the meaning of the word "consequentis," l. 29. He says in a note, p. 125, note 4, "so verstehe ich die *destructio consequentis*, p. 2, 29: negative Umkehr einer Abfolge." In other words he understands "consequens" to mean the same as "consequentia," namely sequence, consequence. Hence if the proposition is: "That which is possible, is possible or has the nature of possibility from something

[1] "Die Impossibilia des Siger von Brabant," Münster, 1898. Band II, Heft VI of *Beiträge zur Geschichte der Philosophie des Mittelalters*.

[2] "Ist schon bis hieher manches in dem Beweise dunkel, so scheinen sich die abschliessenden Worte desselben—vielleicht wegen tiefer greifender Textverderbnisse—dem Verständnis völlig zu entziehen." *Op. cit.*, 126.

else," the destructio of the relation expressed in this proposition is: "That which is not possible, is not possible or has not the nature of possibility, also as a result of something else." The objections here are manifold. The first is that the statement is a *non sequitur*. If the idea intended is that there must always be an external cause why a thing has or has not a given attribute, this idea may or may not be true, but if this is the assumption, then the original proposition above mentioned as well as its destructio, likewise stated before, both follow from this general premise, but the destructio does not follow from the proposition stated in the first instance.

Another more serious objection is that the destructio is irrelevant to the thing the sophist desires to prove and stands in no logical connection with the sentence which follows; unless we doctor the argument in an unwarrantable manner.

The whole thing becomes plain if we understand properly the meaning of "consequens." "Consequens" is the correlative of "antecedens," and denotes the apodosis in a conditional sentence as contrasted with the protasis which is "antecedens." Whether a sentence or proposition has the form of an express condition, "if . . . then," or is relative in structure, "that which is *a* is *b*," makes of course no difference. The latter is equivalent to saying, "if *a*, then *b*."

In the proposition in the text therefore, "That which is possible, is possible or has the nature of possibility from something else," the "antecedens" is "That which is possible," the "consequens" is "is possible or has the nature of possibility from something else." Now if we destroy the consequent or negate it there logically follows the negation of the antecedent. In other words if a thing does not get its possibility from something else, it is not a possible thing, *i.e.*, it has not the attribute "possible" at all. But intelligence is precisely such a thing, for it is not dependent on any thing external to it. Hence intelligence is not a "possible" thing at all. Hence since it exists it must be a necessary thing, and hence needs no God. Now the text is clear and consistent. The proposition derived by "destructio consequentis" should be punctuated as follows: "Quod non est possibile vel naturam non habet possibilis per extrinsecum aliquod vel per defectum extrinseci [antecedens], non habet naturam possibilis [consequens]."

ISAAC HUSIK.

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THE JOURNAL OF PHILOSOPHY, XVIII, 3: *James H. Leuba*, The Meaning of 'Religion' and the Place of Mysticism in Religious Life; *Wendell T. Bush*, Philosophy in France. 4: *Ralph Barton Perry*, A Behavioristic

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MIND, XXX, 117: *G. Dawes Hicks,* Prof. Ward's Psychological Principles; *C. D. Broad,* Prof. Alexander's Gifford Lectures (I); *F. C. Sharp,* Hume's Ethical Theory and its Critics (I); Discussion, Plato's Misconception of Morality.

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